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ABSTRACT

"Wildlife is Basic" is a part of a series of materials in the Wildlife Education Service for Kansas youth series. The goal of the program is to provide information about wildlife and to establish in children an awareness and appreciation of wildlife. This booklet was written for preschool and kindergarten children but can be easily adapted for other grades. The materials are designed for multidisciplinary use and include materials for the study of numbers, alphabet, seasons, colors, and growth as well as wildlife. The teacher's guide includes the following materials: (1) an introduction and foreword; (2) an opinionnaire about the materials; (3) a student award form; (4) ideas for classroom bulletin boards; (5) reproducible worksheets for students; (6) supplemental activities and approaches for language arts, science, art, industrial arts, mathematics, social studies, music, and physical education; and (7) appendices which list resources and references, and includes a glossary of terms used in teaching this topic. (CW)

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Wildlife is Basic

Teacher's Guide

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KANSAS WILDLIFE AND PARKS

SE 051 553

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P-K

Teacher's Guide

Wildlife is Basic

Comprehensive Program Written and Developed by

Joyce Harmon Depenbusch

Wildlife Education Coordinator

Design and Illustration by

Alan W. Baccarella

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KANSAS WILDLIFE AND PARKS

A series of wildlife education materials for Kansas youth from Kansas Wildlife and Parks

THIS MATERIAL IS DEDICATED TO THE CHILDREN OF KANSAS;
MAY THEY KNOW A LOVE OF WILDLIFE.

Funded by hunting and fishing license fees and the
Nongame Wildlife Tax Check-Off Program

Wildlife Education Service
Kansas Wildlife and Parks
Box 54A Route 2
Pratt, Kansas 67124

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Reprinted July, 1987

WILDLIFE IS BASIC

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KANSAS FISH AND GAME

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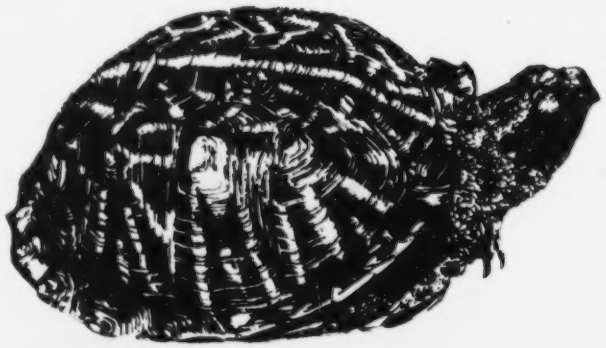

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Introduction

WILDLIFE IS BASIC is part of a series of materials in the Wildlife Education Service for Kansas youth from the Kansas Department of Wildlife and Parks. Other titles in the series are: Wildlife and Me, Food for Wildlife; Wildlife Needs a Place to Live; Endangered, or Alive and Well Living in Kansas; How Do We Group Wildlife?; and Home Is Where the Habitat Is. The material is designed for use by teachers. The goal of the program is to provide information about wildlife and to establish in children an awareness and appreciation of wildlife. This booklet was written for preschool-kindergarten children but can be easily adapted for other grades. The study of wildlife need not be limited to science class but should be multidisciplinary. Enrich your existing curricula with this material. The materials include study of numbers, alphabet, seasons, colors, and growth at the same time that children learn about Kansas wildlife.

You do not have to be a biologist or wildlife expert to teach about wildlife. The Wildlife Education Service materials were written for anyone who has an interest in teaching children about wildlife and the environment. The worksheets and activities in the teacher's guide reinforce information in the student's booklet. Do any quantity or combination of activities and worksheets that are appropriate for your schedule. The lessons may be used as a unit of study or used throughout the year when time allows. The worksheets may be done in whatever sequence you choose.

ONE set of each grade's materials will be provided to each school to be shared among the teachers. The materials may be reproduced for student use.

The Department of Wildlife and Parks has a Wildlife Reference Center at the Pratt headquarters. The center includes films, filmstrips, slide series, games, posters, books and other wildlife related material available to schools on a free loan basis. Return mail cost is the only expense to the school for use of this material. Refer to your Wildlife Reference Center catalog for materials appropriate to your study. Especially recommended for use with this material are: 14-1, Sharing Nature With Children; 14-3, The Curious Naturalist; 3-17, The How and Why Wonder Book of Birds; 3-6, A Child's Book of Birds; and SS-24, Animal Babies. Be sure to check your Wildlife Reference Center catalog for other materials. A catalog has been sent to each school district office. Please contact your administration office for your district's copy. Orders will be filled on a first-come, first-served basis, so we suggest sending your requests in early.

To be effective, material must be used. This format was written to be easy to use, ready to use, and flexible. Little additional preparation or equipment is required. The most important ingredients for success in your lessons will be your enthusiasm and imagination. Technical references can be obtained from the Wildlife Reference Center or your local library.

The material is appropriate throughout Kansas, no matter what size community or region of the state you live in. It is not necessary to have a natural area near your school; use whatever is available. Many of the supplementary activities can be done on the schoolgrounds or in the classroom.

This program was funded from hunting and fishing license fees and partially by the Nongame Wildlife Tax Check-off Program.

Remind your students that when they are outside they are company in the homes of wildlife; therefore, their best manners should be used.

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Foreword

Dear Teachers,

Kansas has a diversity of climate, terrain, and vegetation that provides for a variety of wildlife. Use these attributes to the fullest in your classroom. Tap your students interest in wildlife in all curricula areas by exploring what Kansas wildlife has to offer. People, especially children, need to be more aware of wildlife and how their actions affect wildlife. The future of wildlife depends on actions we make today. Educate our young people to care about their future and the future of wildlife.

You can do me a favor by contacting the K-6 teachers in your district and letting them know, or reminding them of, what the Wildlife Education Service has to offer. I've sent out curriculum, Wildlife Reference Center catalogs, and numerous other resource materials to every public and private building in the state. I've tried every avenue within budgetary limits, that I can think of to inform teachers, librarians, and administrators of the Wildlife Education Service. A reminder from you may get them involved.

Let me know how I can help you better inform you district's teachers. If the K-6 curriculum and other materials that have been sent are lost or misplaced, contact me for a limited number of replacement sets. Thank you for your help.

Please direct any questions or comments concerning the Wildlife Education Service materials to me at the Pratt headquarters. Good luck for a successful and exciting learning experience.

Sincerely,

Joyce Harmon Depenbusch

Joyce Harmon Depenbusch
Wildlife Education Coordinator
Kansas Wildlife and Parks
RR 2 Box 54A
Pratt, Kansas 67124

A true conservationist is a man who knows that the world is not given by his fathers, but borrowed from his children.
— John Madson

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KANSAS FISH AND GAME

Opinionnaire

Your input is important in continuing and improving this program. Any comments or ideas you want to share would be appreciated. Please complete the opinionnaire below or send your suggestions on a separate sheet to:

Joyce Harmon Depenbusch, Wildlife Education Coordinator
Kansas Department of Wildlife and Parks
RR 2 Box 54A
Pratt, Kansas 67124

Title of unit_____ Grade you teach_____
School district_____

The materials were:
_____ very useful _____ moderately useful _____ of no use

Students were:
_____ very interested _____ moderately interested _____ not interested

The materials were appropriate for the grade you teach. ( ) yes ( ) no
(if no, list more appropriate grade)_____

Rank each of the following components on a scale of 1 to 5 based on their value for your use. (1 represents highest grade; 5 represents lowest grade)

_____ student booklet
_____ bulletin board idea
_____ student award
_____ worksheets
_____ supplementary activities & approaches
_____ glossary
_____ resources & references
_____ Wildlife Reference Center

List favorite worksheet (s) or activity (ies)

List curricula areas where you used the material

Approximate amount of time (hours, days) spent using the material

Changes you would recommend. Please be specific.

Other comments

Thank you for your time and effort.

7

After students have successfully completed their study of this aspect of wildlife, award their progress. Copies can be made of this award and presented to them at the end of your unit of study.

Wildlife Awareness Award

IS PRESENTED TO

_____
name

For outstanding progress shown in the study of Kansas Wildlife

on _____ at _____
date school

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_____
signed

motif by Daisy Baughman

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ABC's and Numbers GO WILD!

Combine your study of numbers, the alphabet, and wildlife with the following bulletin board idea: Use an opaque projector to enlarge the animals in your packet or cut out pictures from photocopies. A collage of Kansas animals with the alphabet and numbers as shown below should attract your youngsters' attention.

WILDLIFE IS BASIC

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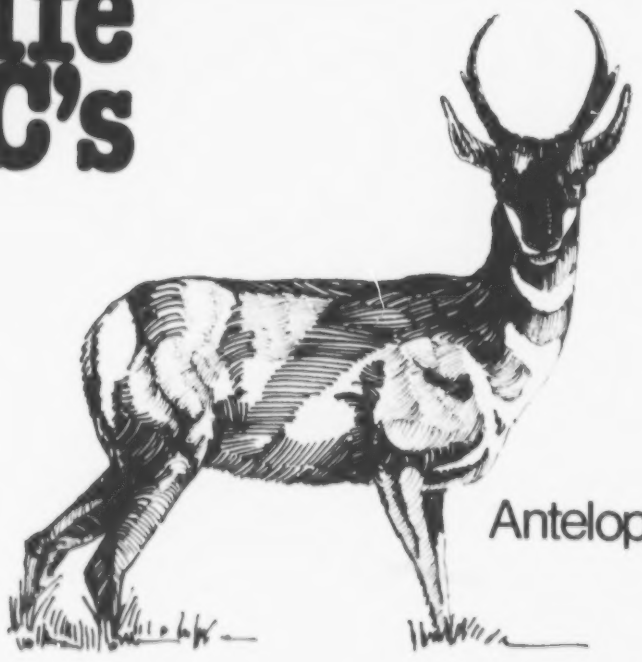
KANSAS FISH AND GAME

wildlife ABC's

NAME_____

A

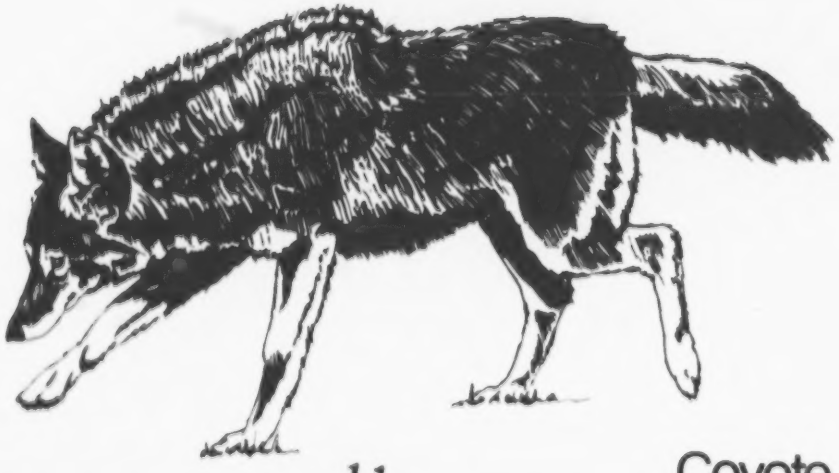


Antelope

B

Badger

C



Coyote

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D

Duck

E

Eagle

F

12

Fox

WILDLIFE IS BASIC

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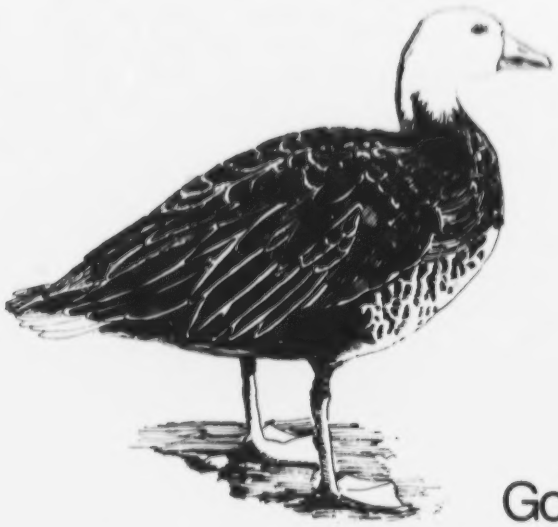
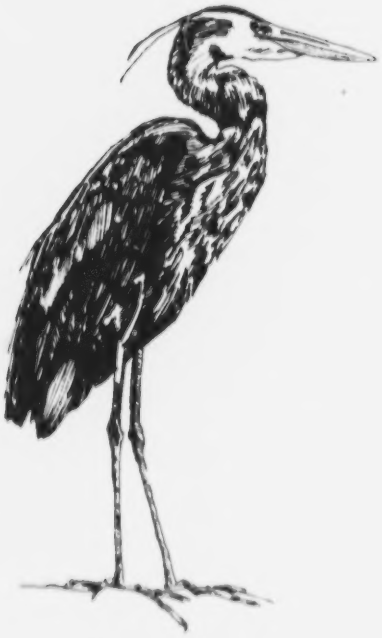
KANSAS FISH AND GAME

G



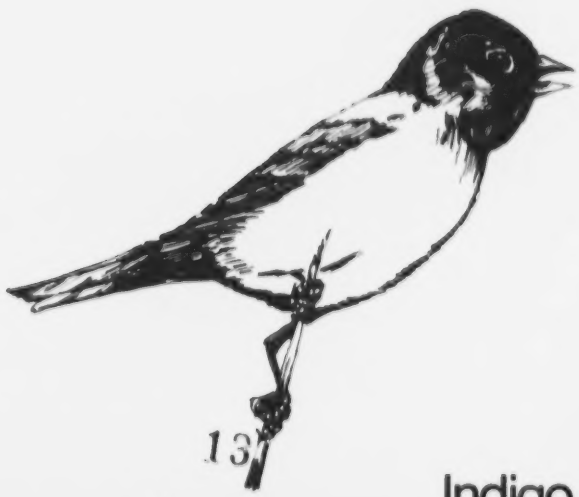
Goose



H

Heron

I



13

Indigo Bunting

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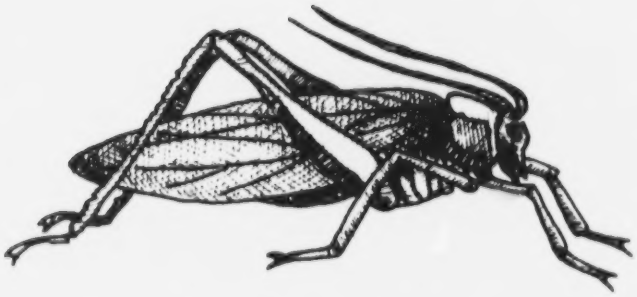
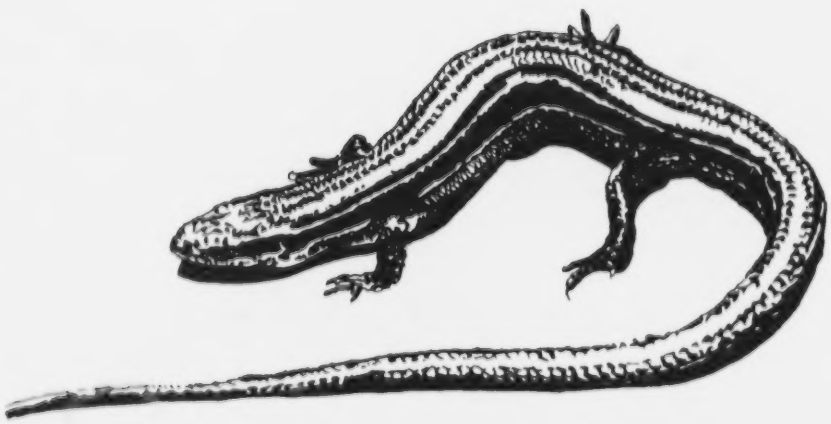
J

Jackrabbit

K



Katydid



L

Lizard

14

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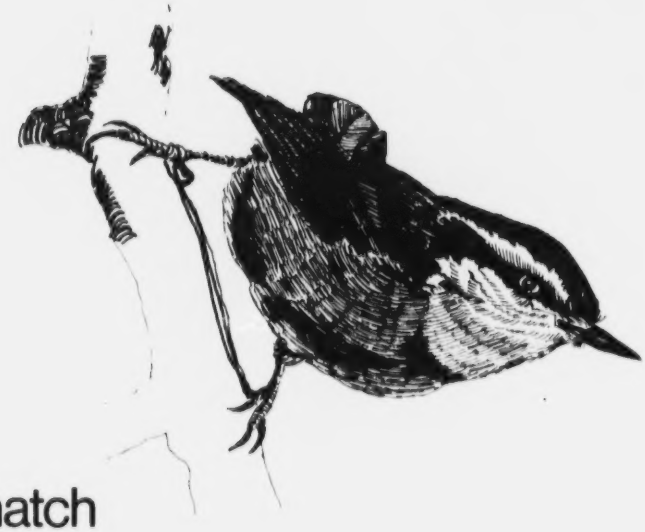
M

Muskrat



Nuthatch

N

O

Owl

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Prairie dog

P

Q

Quail

Rattlesnake

R

16

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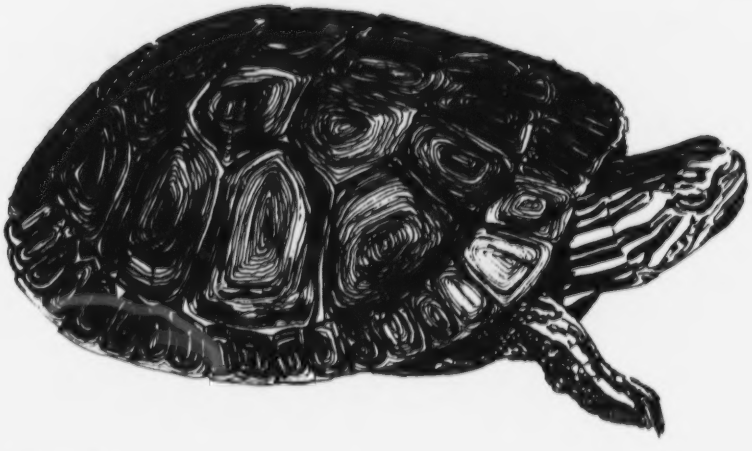
S

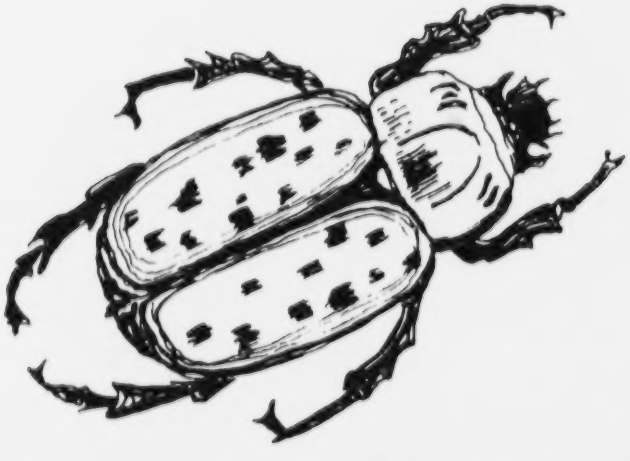
Squirrel



T

Turtle

U



Unicorn beetle

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V

Vireo

W

Woodchuck

X

Xenops

18

WILDLIFE IS BASIC

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Y

Yellowlegs

Zebra Swallowtail

Z

WILDLIFE IS BASIC

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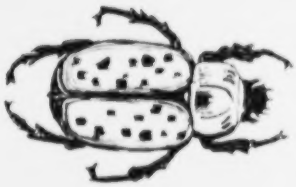
KANSAS FISH AND GAME

Name the Animal with 1 Letter

NAME _____

Find the animals shown below on your alphabet pages. Put the first letter of the animal's name in the blank.

_____



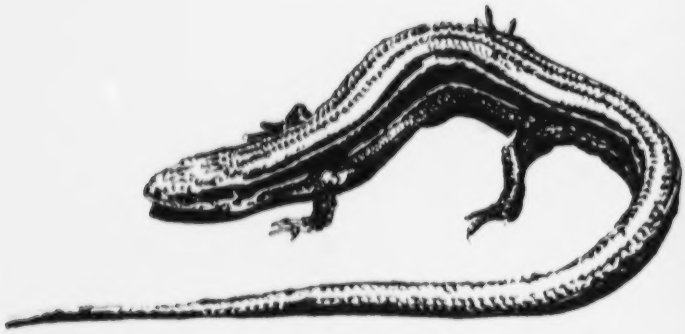
_____

_____

_____

_____

_____



_____

WILDLIFE IS BASIC

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KANSAS FISH AND GAME

counting CRITTERS

NAME_____

1

One

Eagle

Turtles

2

Two

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KANSAS FISH AND GAME

NAME

Three

3

Raccoons

Four

4

Rabbits

22

WILDLIFE IS BASIC

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KANSAS FISH AND GAME

NAME _____

5

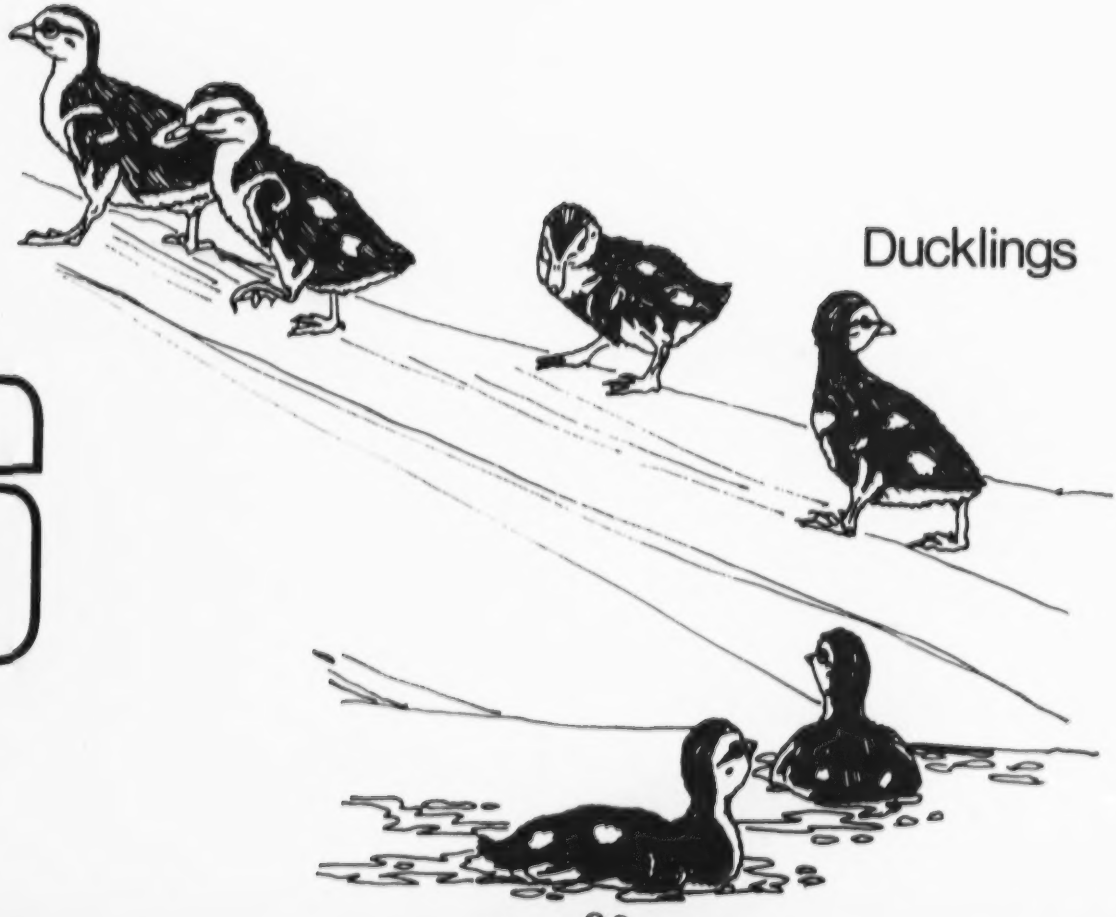
Five

Goslings

6

Six

Ducklings



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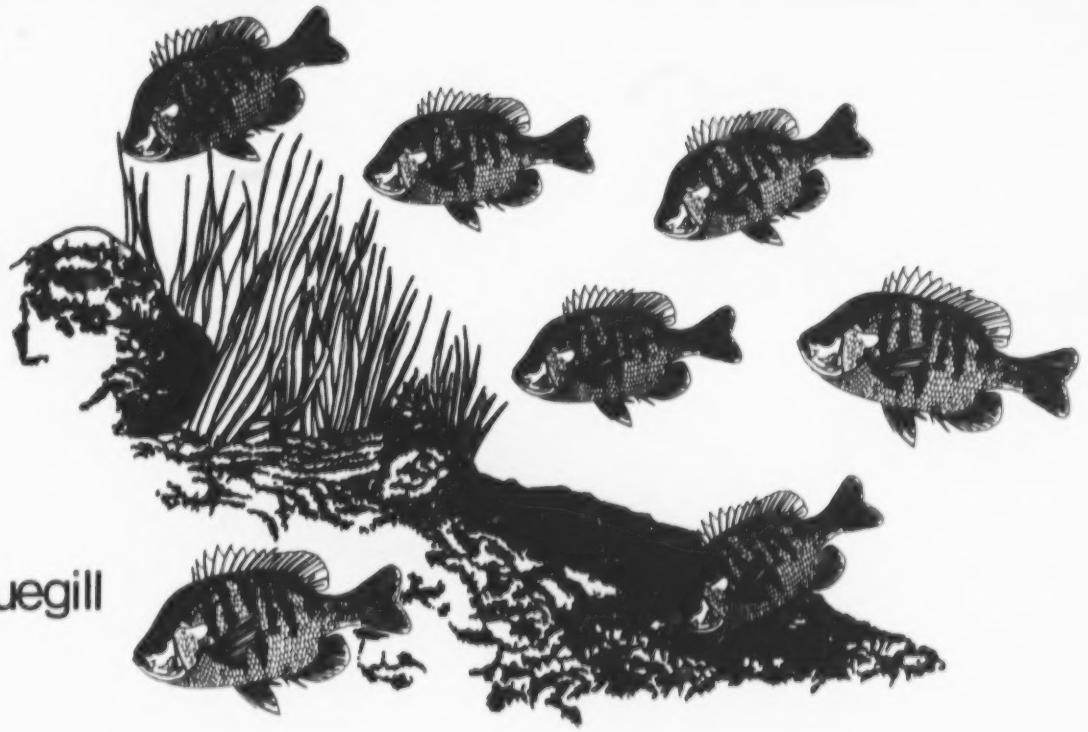
KANSAS FISH AND GAME

NAME_____

Seven

7

Bluegill



Eight

8

Bass

24

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KANSAS FISH AND GAME

NAME_____

9

Nine

Frogs

10

Ten

Grasshoppers

25

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THE WILD RAINBOW

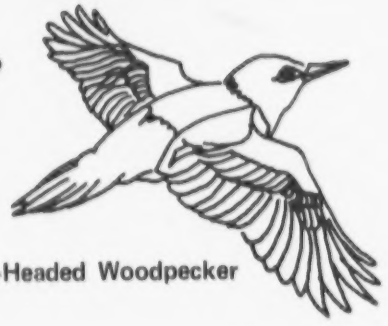
NAME _____

RED

Red Fox

Red-Winged Blackbird

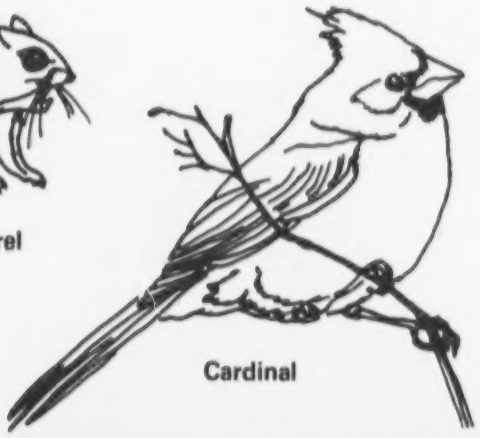
Red-Spotted Toad



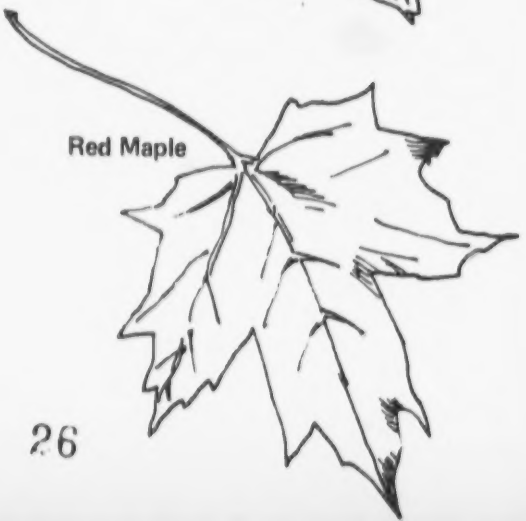
Red-Headed Woodpecker

Apple

Red Squirrel



Cardinal



Red Maple

26

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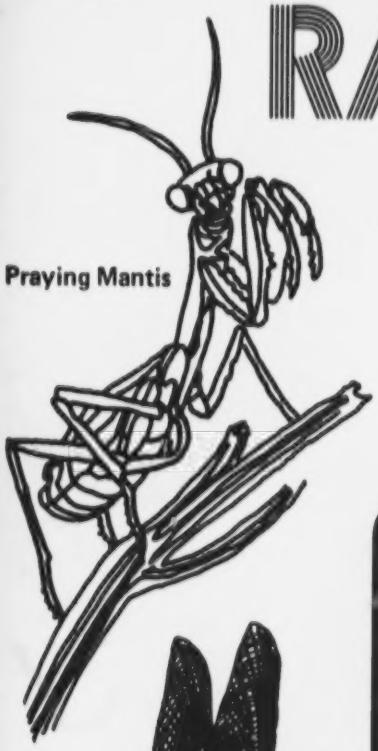
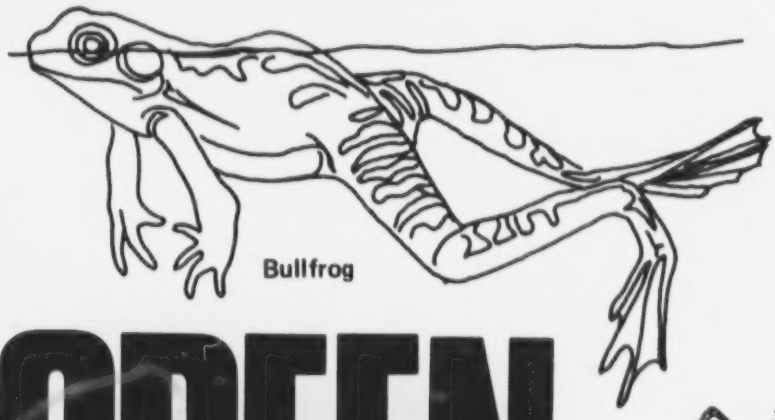
THE WILD RAINBOW

NAME_____



Praying Mantis

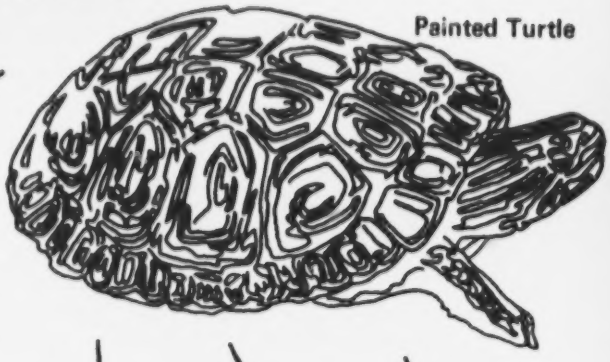


Bullfrog

GREEN

Katydid

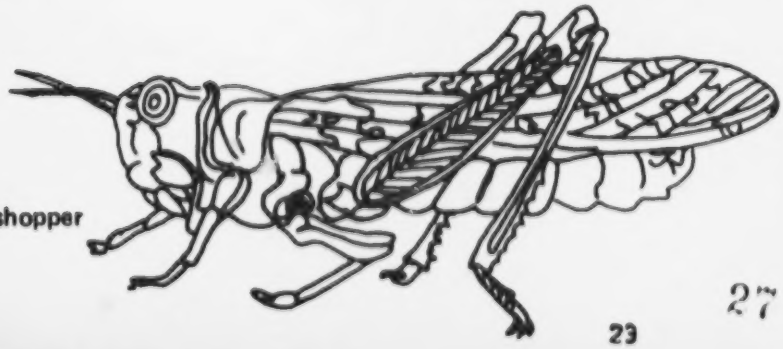
Dragonfly



Painted Turtle

Little Green Heron

Grass



Grasshopper

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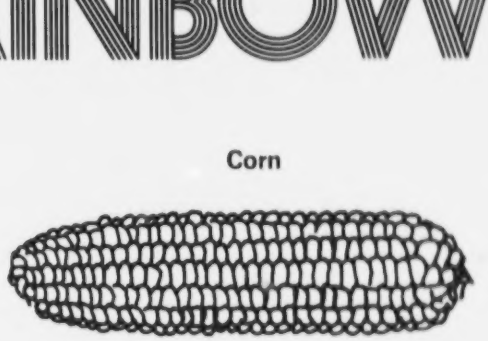
THE WILD RAINBOW

NAME

Meadowlark

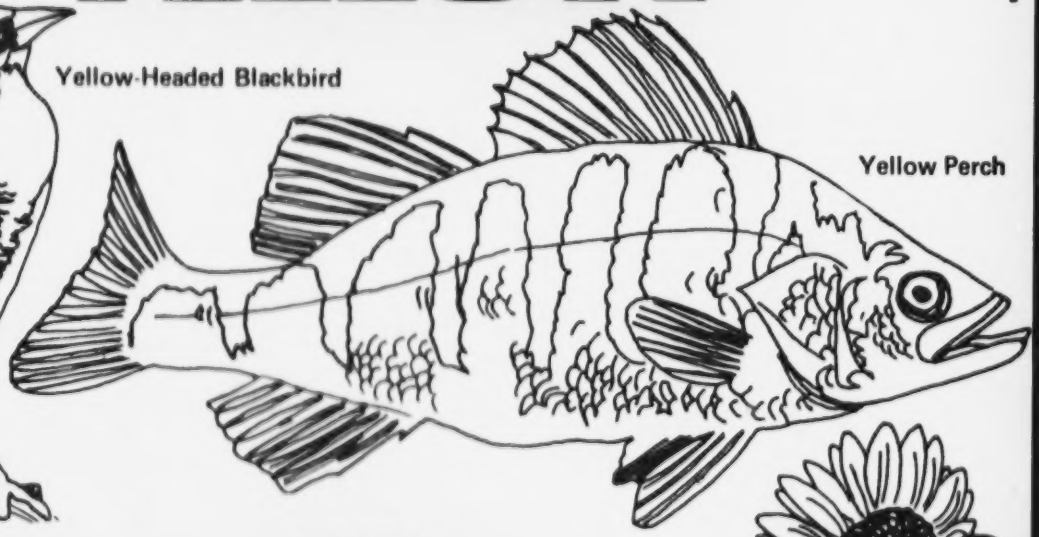
Corn



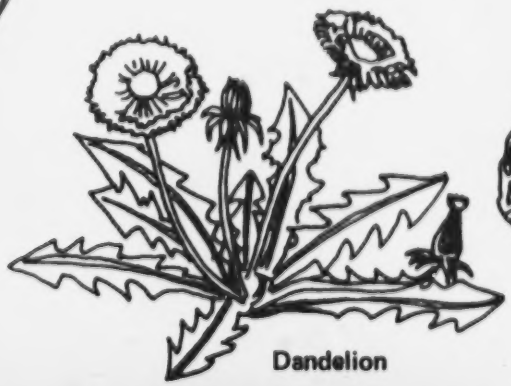
Bumblebee

YELLOW

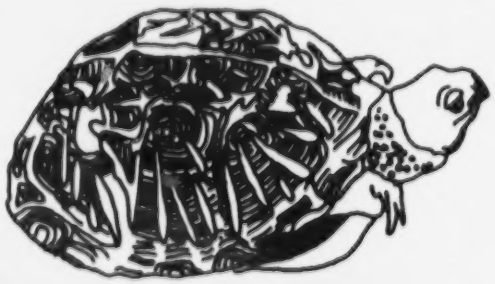
Yellow-Headed Blackbird



Yellow Perch



Dandelion



Ornate Box Turtle

Sunflower

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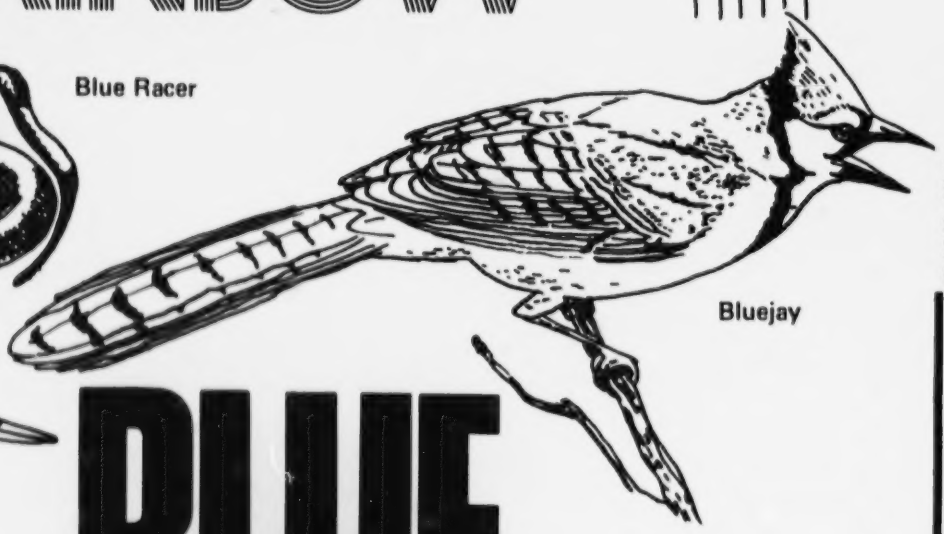
THE WILD RAINBOW

NAME _____

Blue Racer

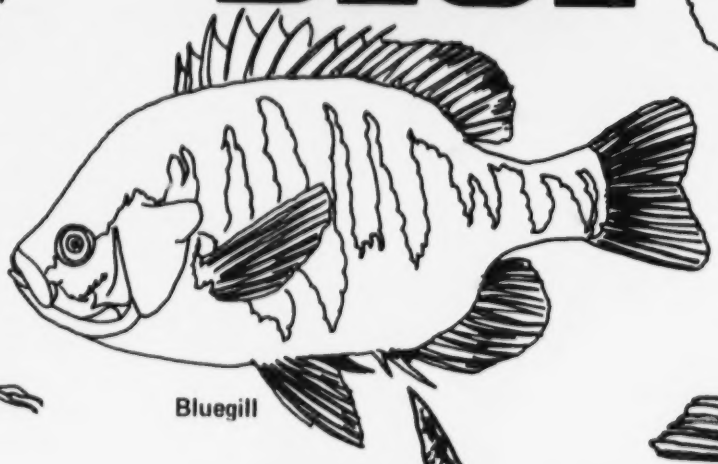


Bluejay

BLUE

Great Blue Heron

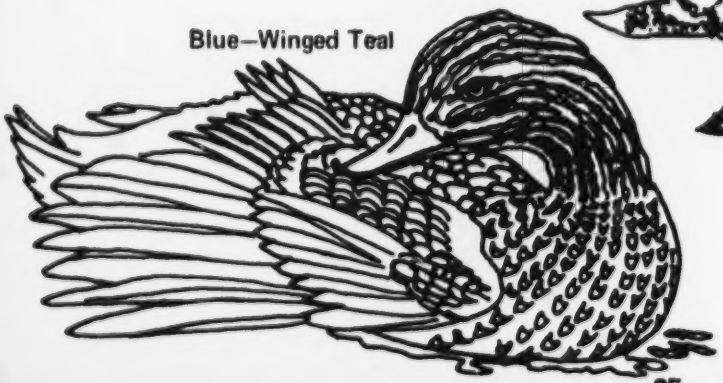
Blue Sky

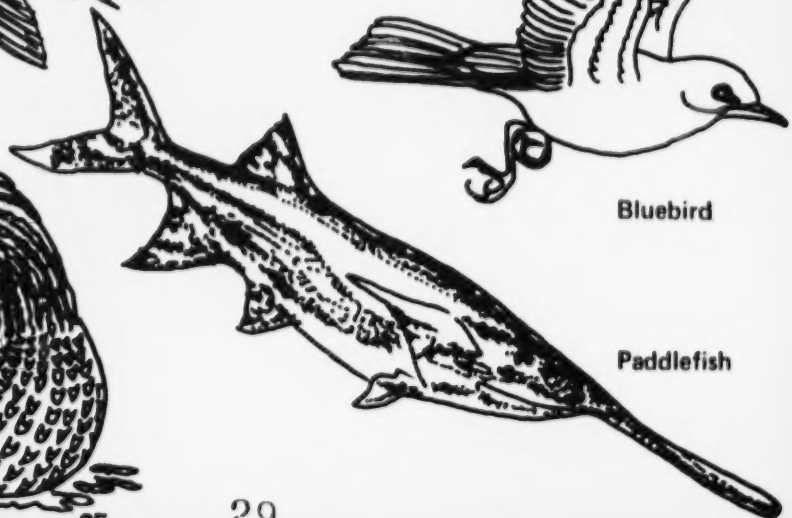


Bluegill

Bluebird

Blue–Winged Teal





Paddlefish

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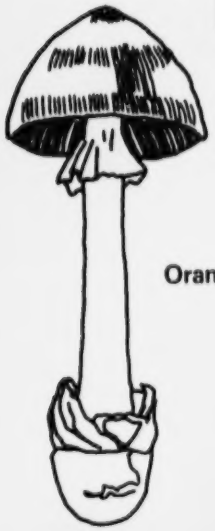
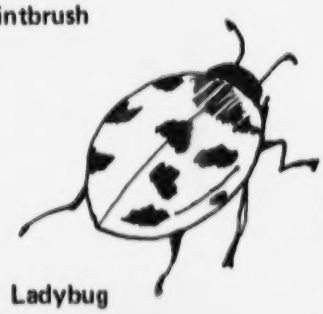
THE WILD RAINBOW

NAME_____



Orange Amanita

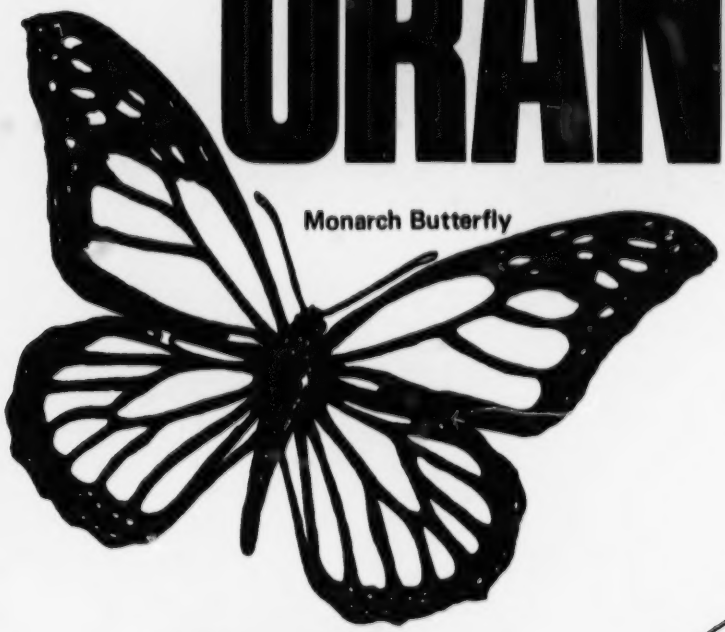
Indian Paintbrush



Ladybug

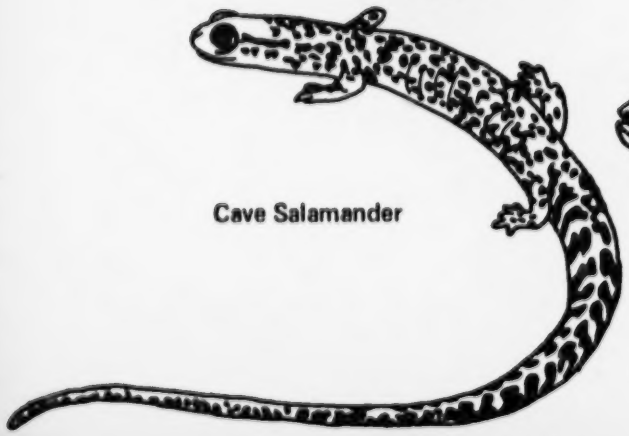
Prairie Chicken's Orange Sacs

ORANGE

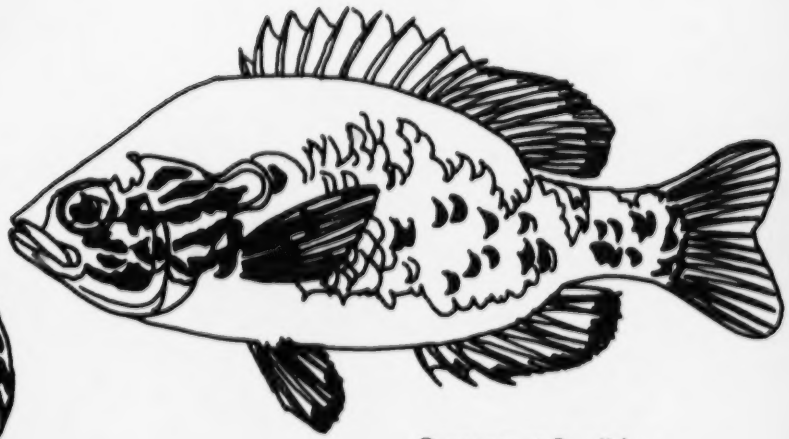


Monarch Butterfly

Tiger Lily



Cave Salamander



Orangespot Sunfish

WILDLIFE IS BASIC

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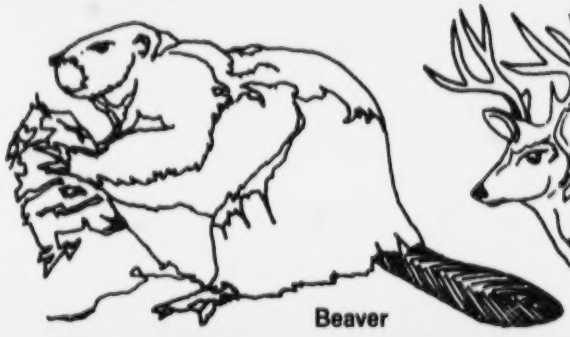
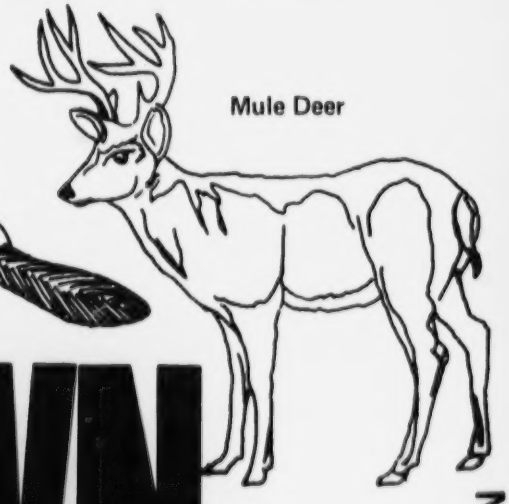
KANSAS FISH AND GAME

THE WILD RAINBOW

Bat



Beaver

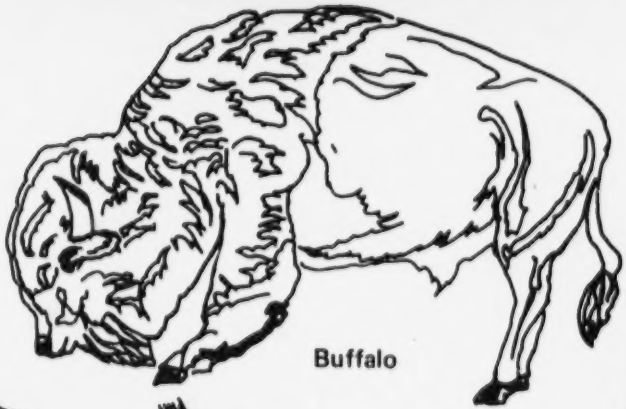


Mule Deer

BROWN

NAME_____

Prairie Dog



Buffalo

Great Horned Owl

Rattlesnake

Squirrel

WILDLIFE IS BASIC

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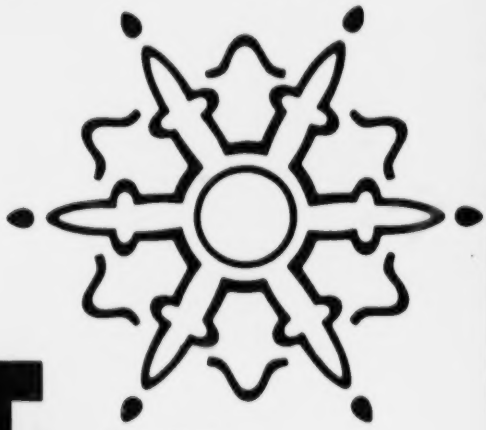
KANSAS FISH AND GAME

THE WILD RAINBOW

NAME_____

Egret

Bald Eagle's Head

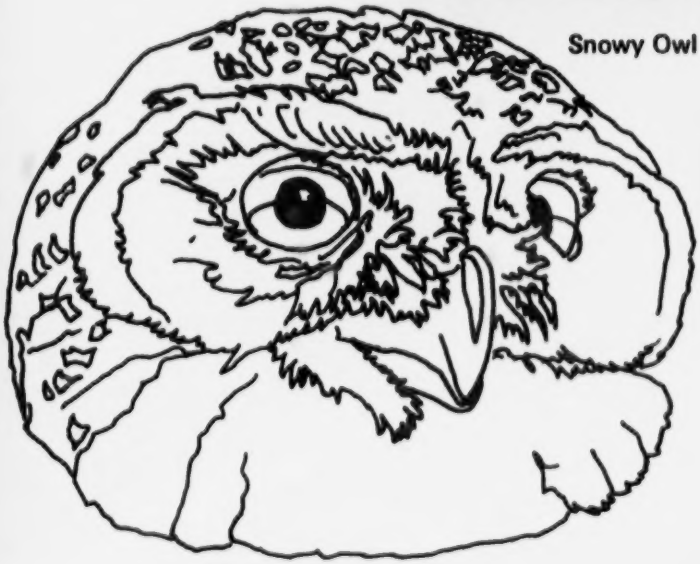


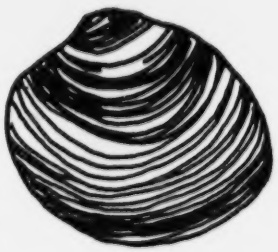
Snowflake

WHITE

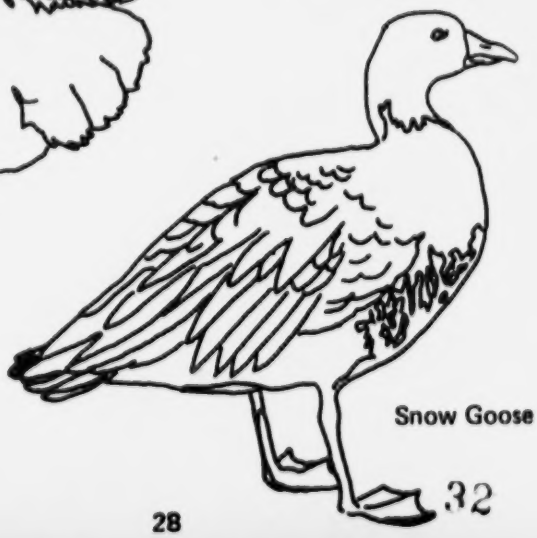
Yucca Flowers

Snowy Owl





Clam



Snow Goose

Moth

WILDLIFE IS BASIC

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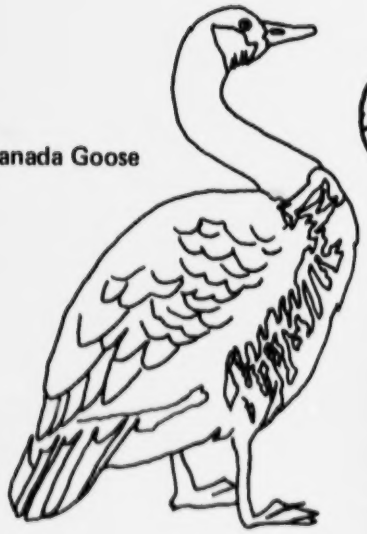
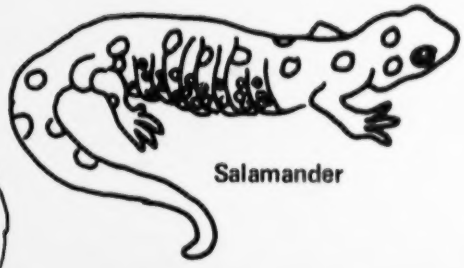
KANSAS FISH AND GAME

THE WILD RAINBOW

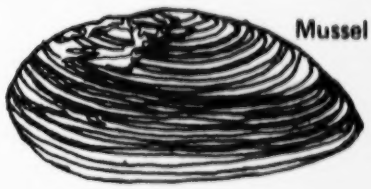
NAME_____



Canada Goose



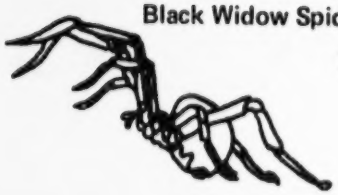
Salamander



Mussel

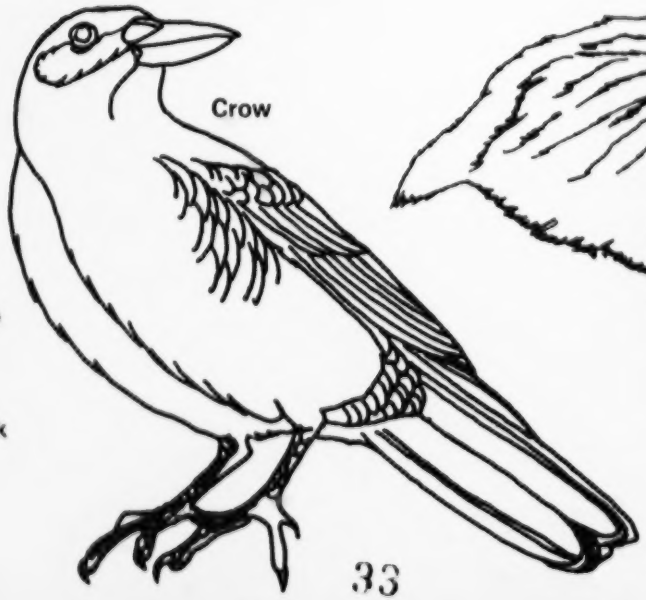
BLACK

Black-Capped Chickadee



Black Widow Spider

Skunk



Crow

Badger

33

WILDLIFE IS BASIC

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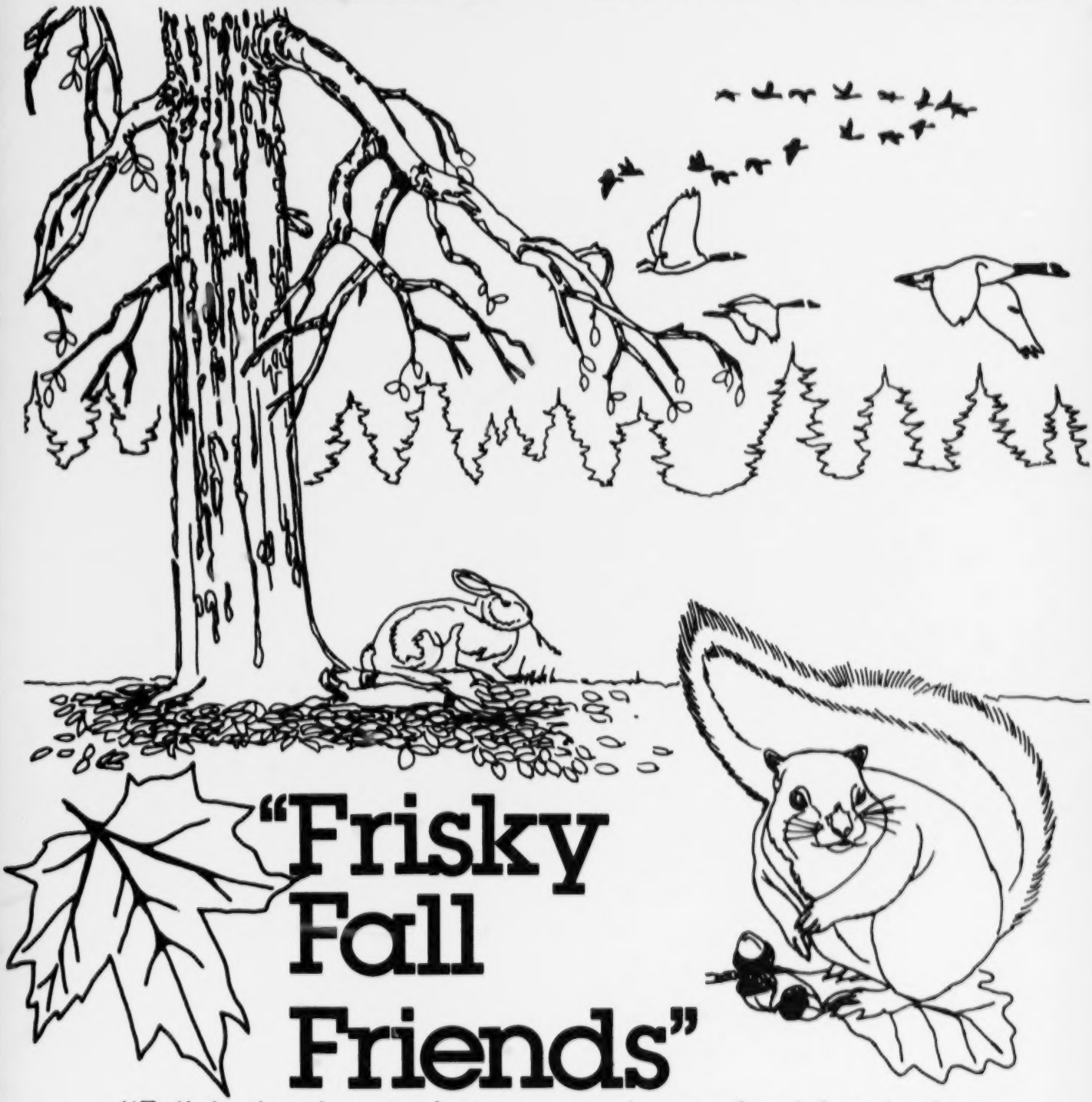
KANSAS FISH AND GAME

SEASONS MAKE A SCENE



"Frisky Fall Friends"

"Fall is the time to fatten up and store food for the long, cold months ahead."

NAME_____ 34

WILDLIFE IS BASIC

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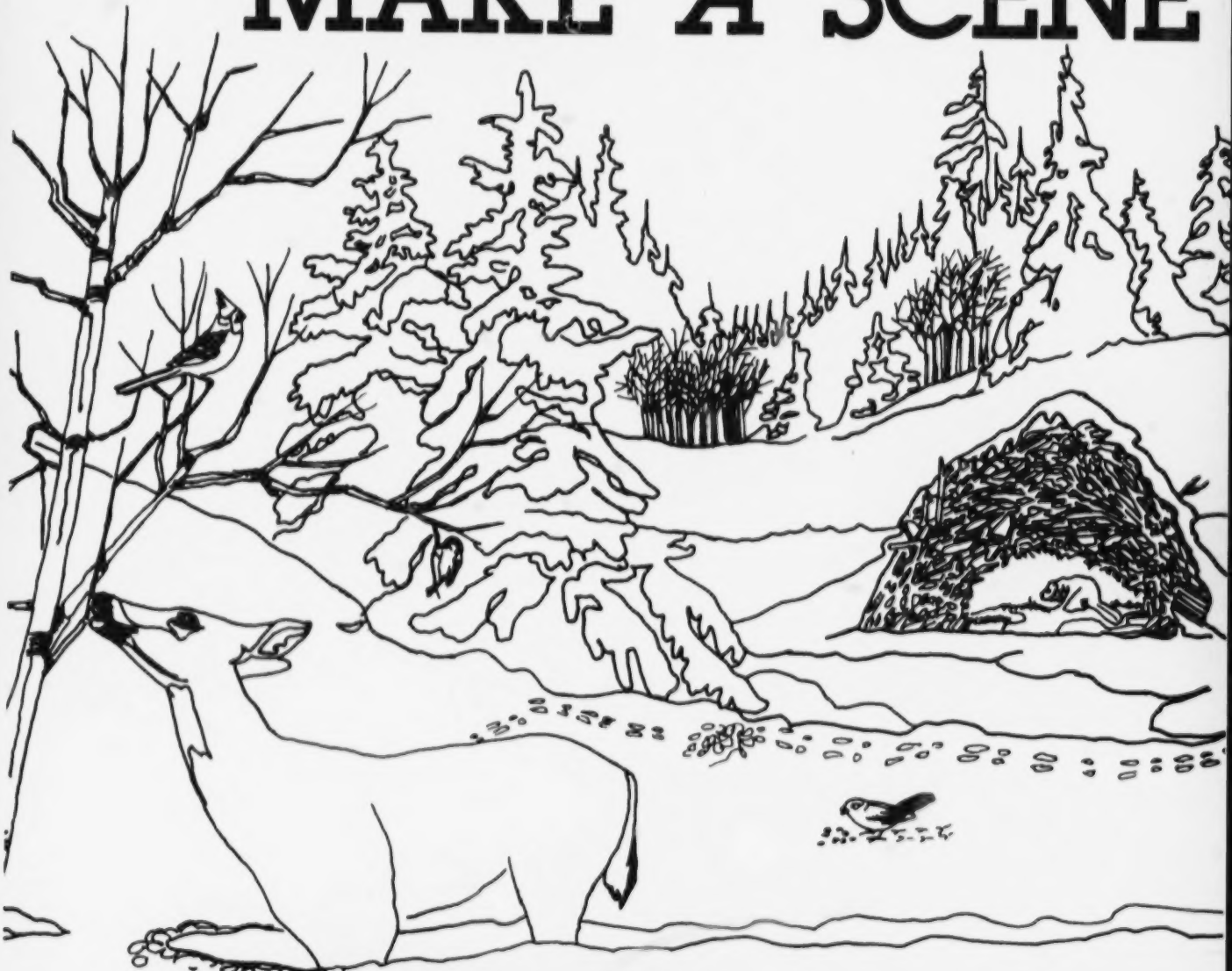
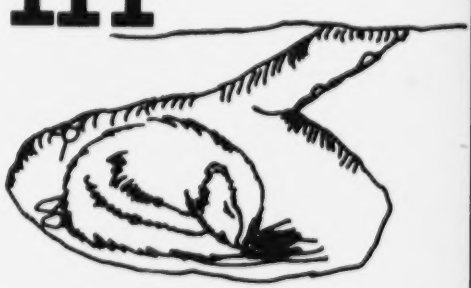
KANSAS FISH AND GAME

SEASONS MAKE A SCENE



"Wildlife in Winter"



"Eating, sleeping, and staying warm are winter's biggest chores."

NAME_____

WILDLIFE IS BASIC

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KANSAS FISH AND GAME

SEASONS MAKE A SCENE

"Spring Fling"

"Spring brings warmer days, flowers, food, singing birds, and animal babies."

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NAME_____

WILDLIFE IS BASIC

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KANSAS FISH AND GAME

SEASONS MAKE A SCENE

"Summer Sunshine"

"All things that love the sun are out feeding and raising young."

NAME

growing wild

WILDLIFE IS BASIC

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—Build a class terrarium so that children can observe animals such as snails, earthworms, beetles, etc. Children can observe the interaction of animals with plants. How are plants and animals alike, and how do they differ?

—Each child builds a nature trail for an ant or other small animal. They find five to ten interesting features in their area and mark them with twigs or popsicle sticks. These are the points of interest, or stations, on the trail as seen from the perspective of the small animal. Imaginations should be used to lead other students as spectators on the trail. An area of grass might be a jungle. A rock could be a cliff or mountain. Spectators follow the trail on hands and knees to observe the small aspects of the environment. Everyone should go on at least one tour of another child's trail. Discuss the word "micro" and the importance of small living things.

—To better understand the insect world, observe a variety of insects in your school yard. Attract them with strips of fabric soaked in sugar water or molasses. Notice the different sizes, shapes, and adaptations. Compare insects from as many habitats as possible.

—Start an ant colony in a narrow glass case. Students can easily see the underground world of the ants. What do they eat? How do they communicate? How do they use their antennae?

—In your school yard, set up a platform about four feet off the ground. Place on it pieces of string, yarn, cloth, small sticks, and other items that birds might use to build a nest. Keep records of which items are taken. Do the birds seem to choose one item over another? Can anyone spot the colored yarn and string in nearby nests?

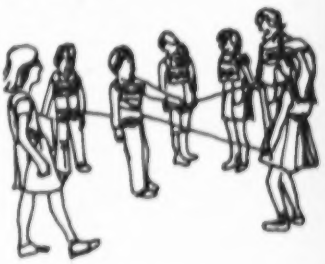
--Take a census of natural and man-made things in your school yard. Divide the natural list into plants and animals. Take another census of living and non-living things.

—Children become more aware of their senses through outdoor activities. Have the children count the number of things they can see or smell from where they are standing. How many different things can they feel from where they sit? (Such as soil, the wind, tree bark, leaves) Next, have them close their eyes, listen carefully, and hold up a finger for each different sound they hear.

—Discuss the need for clean air and water in order for wildlife and people to survive. Children may be able to relate these basic needs to their family pet.

—Take your students on a hike around the school grounds, neighborhood, or nearby parks. Encourage them to use their imaginations during the exploration. The woody areas may become jungles, and buildings mountains. Where are the wild animals? Are there different animals in the shrubs than on the school lawn? Help your students be aware that they are looking for very small animals which are still an important part of nature. Stress to your class that the area should be kept clean and treated with care so that others may enjoy it. Back in the classroom, students can write stories or draw pictures of their adventures.

—Play a modified version of the food web game. (See *Food for Wildlife* Teacher's Guide for a more complicated version of the game.) Have students draw (or have available for them) pictures of the following: the sun, water, air, soil, a plant, and the animal of their choice. Talk about each of the pictures and why they are important to each other and to us.



—Children may have grouped or classified objects such as buttons before. Let them classify pictures of animals by size, color or how they move, fly, swim, walk, etc. Take them outside to try the same activity on animals in the schoolyard.

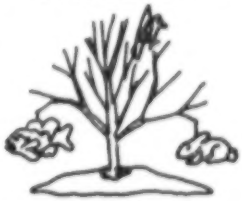
—Take a close-up look under water with a waterscope made from a milk carton. Cut off the top end of the carton and cut a window in the bottom. Cover this with clear cellophane. Students place their waterscope in a pond or stream to observe what is in the water.

wildlife education service

Art

—Make copies of the student pages for children to color and take home. How many of the animals are brown, gray, green, etc.?

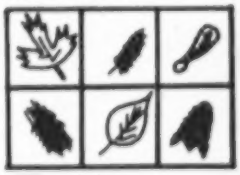
—Use the Wild Rainbow pages to study colors. Explain that most animals are not just one color but a variety. Give each student a square of construction paper, making sure that there are a variety of colors. Have the children find one or more things in the environment that are close to that color.



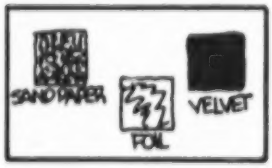
—Make an "animal tree" from a dried branch that has many places to hang ornaments. Have the children draw, paint, or build the animals of their choice. If necessary, fasten heavier paper to the back of each picture for support. Attach the decorations to the tree. The pictures can be changed throughout the year with animal homes and foods added.

—Design wildlife bookmarks or book jackets. Cover surface with clear contact paper for durability.

—Construct nature mobiles. Gather sticks or branches to support the mobile and attach natural or un-natural objects with string or yarn. These objects can be collected while on a hike, but care should be taken that damage is not done to the environment. Students can hang their mobiles in the classroom or take them home to share.



—Explore the outdoors by making texture rubbings. Section paper by folding it several times. Use a crayon to rub a variety of materials on each section. You may suggest items such as different leaves, different kinds of tree bark, or the bottoms of students' shoes.



—Take students outside to observe their environment. Study textures by giving each child a 5 x 7 index card with a small square of sandpaper, aluminum foil, and velvet glued on it. Children compare textures they feel outside with ones on their cards. Which is softest? Which is roughest? Try the activity another time but use additional textures.

—Build animal models from rocks or potatoes. Add pipe cleaners, construction paper, buttons, or natural objects, such as seeds and leaves to complete the creatures.

—Make jigsaw puzzles from the children's animal drawings.

—While hiking, collect natural objects such as seeds, pine cones, dead twigs, dried mushrooms, etc. to make a nature picture or class collage. Items can be glued to cardboard to form a three-dimensional collection.

—Make wildlife sculptures from tumbleweeds, sand, or snow. Paint the finished sculpture with dilute tempera in a spray bottle or with spray paint. Details can be added with a paint brush or additional materials such as fabrics.

Industrial Arts

You can attract wildlife to your home and school yard if you provide habitat. Here are some easy-to-construct feeders that will bring enjoyment during the winter.

—Make bird feeders from dried grapefruit rinds or coconut shell halves. Hang them from a branch with string. Fill with seed.

wildlife education service

—Hang sunflower heads or thistles from branches. Set aside a plot at home or in the schoolyard to grow them.

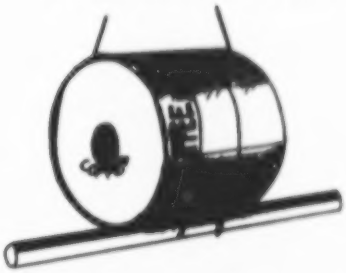
—String popcorn, peanuts and cranberries and drape around a tree.

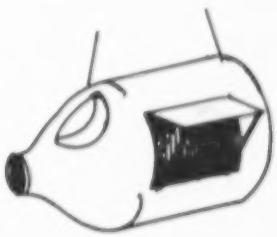
—Press peanut butter into a pine cone and roll the cone in a mixture of bird seed. Hang with string from a tree branch.

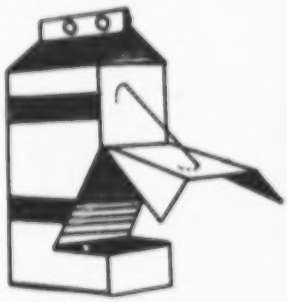
—Make a feeder for small birds with a coffee can, wire, and a dowel or branch. Cut out the bottom of the can. Carefully cut out two 2-inch holes in the center of two plastic lids. Put the lids on the can. Hang the feeder horizontally by running wire through small holes in the lids and through the can. Attach a stick or dowel as a perch.

—Recycle detergent and bleach bottles to make feeders. Thoroughly clean the containers. Hang the detergent bottles vertically after cutting two circles the size of a 50-cent piece in their middles on each side. Slide a perch through nail holes below the opening. To make a horizontal feeder from a bleach bottle, cut 6-inch long and 4-inch wide flaps in the side of the bottle. Prop these open with a twig. Attach a dowel or twig perch and hang with wire.

—Use a half-gallon milk carton for a feeder. Cut out an opening for feed about 1¼ inches deep. Hold up the roof with a straightened paper clip inserted in the side of the carton and the roof. Bend the clip to hold the roof in place. Reseal the carton with a stapler and hang with a wire, or set feeder on a windowsill. Small holes can be made in the bottom of the feeder to let rainwater out.







—Suet feeders are easy to make from an old onion bag or nylon net. Open the bag and fill it with suet (animal fat) from the grocery or meat market. Tie the bag shut and hang from a tree branch.

—Build a log feeder from a dead branch about 15 inches long and 3 inches thick. Nail bottle caps onto it. Attach an eye bolt into the top of the log to hang the feeder vertically. Fill the caps with a peanut butter-bird seed mixture. An alternate method is to drill holes in the log and fill them with a mixture of bird seed, peanut butter, and ground suet.

- Two aluminum pie pans can be combined with one 8- to 10-inch dowel and two jar lids to make a feeder. Place a metal jar lid in the center of a large aluminum pan and another inside a smaller pan. These lids will add weight and support to the feeder. Nail one end of the dowel to the small pan and lid arrangement. Attach the top of the feeder (large pan and lid) to the other end of the dowel with a nail or eye bolt.

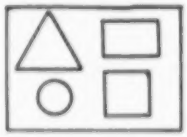
It is very important to continue feeding birds once you begin in the winter. The birds will learn to depend on you for food until they can find other sources of food in the spring. If you stop feeding during the cold weather, the birds may suffer.

wildlife education service

Keep a record of the birds you see and their behavior. What are the different birds' favorite foods? Have the class bring in leftover bread crusts, oatmeal, corn, unsugared cereals, etc. to fill the feeders. Most meat markets will give suet away or sell it inexpensively. Ground suet is a good addition to the seed mixtures. The fat will help the birds withstand the winter cold.

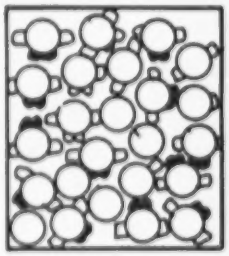
Mathematics

—Cut out animal pictures from magazines or photocopies from the children's booklet. Arrange the pictures on sheets, such as 1 buffalo, 2 lizards, 3 rabbits, etc.



—The natural environment is made up of different shapes. Begin a study of geometry by giving the children cards with a circle, square, triangle and rectangle drawn on them. Have them find things on the school grounds that are similar to those shapes.

—Use the enclosed growth chart for an introduction into measuring. Connect the sections and hang the chart on the wall. Measure each child's height and mark it on the chart. Compare measurements as the school year progresses. Make a copy of the growth chart for each child to color and hang up at home.



—Demonstrate the effects of lack of space and crowding with the following activity: Place an old blanket, sheet or tarp outside or on the floor. Measure the area. Ask the entire class to stand somewhere on the blanket. The children get off and you fold the blanket in half. Measure the new area and have the children get back on the blanket. They may have to work at getting in the space. Have them get off, and once again, fold the blanket in half. Measure the new area. Have the students attempt to fit. They should use their imaginations to get most of the children on. Continue the procedure until only one person fits. Have the children compare this situation with that of wildlife and habitat loss. Wildlife and people need space.

Social Studies

—Learn more about the seasons by keeping a record of changes throughout the year. Have the class pick a special spot on the schoolgrounds, or allow each child his or her own location. Observe the changes that take place through the year. How do shadows change with the time of day and season?

—People use natural resources at a fast rate. Recommend to your students that they recycle and conserve natural resources as much as possible. Organize a paper or aluminum recycling project for your school or district.

—Have your students list all things that they need to live. How does this list compare with that of wildlife? Which items overlap as needs of humans and wildlife? Can the children revise their list and do without some things? Stress food, water, and cover as the essentials for wildlife and humans. Try to differentiate between what we need to survive and which items are for a "better" standard of living.

Music

—There are many songs dealing with the environment or specific animals, such as "The Ants Go Marching." Find some other songs that deal with wildlife, or put a poem to music.

—Make a cassette tape of animal sounds. Bird songs are available through the Wildlife Reference Center. Have children listen to calls or songs of common birds. Tap out the rhythm of the animal sounds on your desk top or by clapping your hands.

—Have children listen to bird or other animal sounds. Then have them design an animal they think would make that sound. Later, identify the animal and compare the real animal with the imaginary.

—Write new wildlife-related lyrics to old songs.

—Some birds, such as the mockingbird, can imitate other birds. How well can you "mock" bird songs? Put words to the beat of bird songs and calls.

—Some animals makes specific calls, warning signals, or songs. Design instruments that sound like animals. Use wood, sandpaper, glue, construction paper, and odds and ends to create the sounds.

Physical Education

—When students are playing or running on the playground, have them pick up litter. Their ticket to get back inside is two pieces of litter.

—Play porcupine tag. The porcupine is "it" and can move easily while the other players are required to hold one leg and hop. They can be tagged by the porcupine if they let go of their leg. If caught, they become the porcupine.

—Play "Prairie Rattlers." The group forms a circle around two blindfolded members, making a "snake pit." The blindfolded players are the prairie rattlers. Their rattles are tin cans with stones in them. One snake is the pursuer, who has 5 shakes of the rattle to find and touch the pursued. The pursued must respond immediately after each shake from the pursuer. The pursued can shake as often as he/she dares. The players forming the snake pit keep track of the rattles and cheer. The snake pit may change in size and shape to add variety.

—Take a blind trust walk. Students work with partners, each having a chance to be blindfolded. While "blind" they are carefully led to explore surrounding areas using their other senses. The leader may have the blindfolded person experience touching a feather or tree bark, smelling the soil, listening to the wind, etc. A group can be led together by having participants hang onto a rope throughout the course. Conclude the activity by seeing if the participants can retrace their steps when the blindfolds are removed.

—Divide the class into small groups for a game of leap frog. Discuss how frogs move. Expand the game to include other animals. Have students act out the movements of other wildlife and let the other students guess what they are pretending to be.

—Take a "blindfolded caterpillar crawl" outdoors. Children can become segmented snakes by joining together.

—Divide class into groups of approximately 5. Give each group an animal name. The group combines to form the animal. The rest of the class tries to guess what it is.

—Play "Nesting Red-Winged Blackbirds." Players are in groups of 3, except for one person who is the caller. Two of the group hold hands and form a cattail nest. The third player is a red-winged blackbird who stands inside the nest. When the caller says, "Blackbirds find a new nest," the birds change locations and the caller tries to find a home. The un-nested bird becomes the new caller. After a while, let the nests and the bird players change roles.

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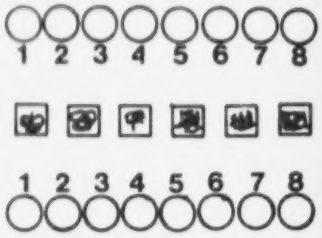
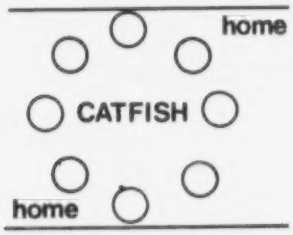
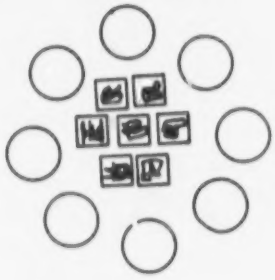
—The class forms two teams and counts off. The teams face each other with pictures of animals on a center line. The instructor says the name of one of the animals, then calls a number. The two children with that number run to the correct pictures, try to get it, and return to their places in line. The picture is replaced and play continues. The instructor keeps score. Add a challenge by having the player who does not reach the picture first attempt to tag the other player before he or she returns to home base. If the player is not tagged, the team gains two points; if tagged, one point.





—Play "Catfish and Bluegill" by choosing one person as the catfish. The others are bluegills. The bluegills form a circle around the catfish. The bluegills have home base lines on either side of the circle. When instructed, the bluegills skip or hop around the circle. The catfish may jump out at any time and tag a bluegill. Any bluegills that are tagged before they reach home become catfish. Play continues until all of the bluegills are gone.

—Make several copies of 5 to 7 animal pictures. Tape these on tag board and fasten them to the floor. Students form a circle around the pictures and hop, skip, walk or run in the circle. When the instructor says "Stop," everyone stops moving. The teacher calls out the name of one of the animals and the children try to find the animal and stand by the picture (one person per picture). The children who did not find a picture return to the circle and resume moving until another animal's name is called. The game is finished when all of the children are standing by a picture.



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Resources and References

etc... ...Appendix

Locate the Department of Wildlife and Parks office closest to you. The office personnel may be able to help you, and most offices have free informational brochures.

Pratt Headquarters
Kansas Department of Wildlife and Parks
RR 2, Box 54A
Pratt, Kansas 67124
316/672-5911

NC Regional Wildlife and Parks Office
511 Cedar, Box 489
Concordia, Kansas 66901
913/243-3857

Downs District Office
Highway 24E
Downs, Kansas 67437
913/454-6315

NE Regional Wildlife and Parks Office
3300 SW 29th
Topeka, Kansas 66614
913/273-6740

Blue Rapids District Office
801 S. Main
Blue Rapids, Kansas 66411
913/226-7509

Kansas City District Office
Clover Leaf Bldg. 1, Suite 221
6811 W. 63
Shawnee Mission, Kansas 66202-4080
913/722-6024

Manhattan District Office
Rt. 6
Manhattan, Kansas 66502
913/539-9479

Osage District Office
Osage State Fishing Lake
Box 303
Carbondale, Kansas 66414
913/665-7341

NW Regional Wildlife and Parks Office
Route 2
Hays, Kansas 67601
913/628-8614

Colby District Office
190 Franklin, Box 366
Colby, Kansas 67701
913/462-3367

SC Regional Wildlife and Parks Office
8420 N. Broadway, Box 317
Valley Center, Kansas 67147
316/755-2711

El Dorado District Office
Walnut Valley Bank Bldg., Box 129
El Dorado, Kansas 67042
316/321-9399

Emporia Wildlife Investigation Office
1830 E. Merchant
Emporia, Kansas 66801
316/342-0658

Fall River District Office
Rt. 1, Box 85
Severy, Kansas 67137
316/583-6783

Winfield District Office
Winfield State Hospital
Winfield, Kansas 67156
316/221-1200 ext. 275

SE Regional Wildlife and Parks Office
222 W. Main Building, Suite C & D
Chanute, Kansas 66720
316/431-0380

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SW Regional Wildlife and Parks Office
808 Highway 56
Dodge City, Kansas 67801
316/227-8609

Independence District Office
Park Authority Bldg., Elk City Reservoir
Box 945
Independence, Kansas 67301
316/331-6820

New Strawn District Office
Box 103
New Strawn, Kansas 66839
316/364-2282

Pittsburg Distict Office
Route 2, Box 372 AAA
Pittsburg, Kansas 66762
316/231-3173

Mound City District Office
Courthouse
Mound City, Kansas 66056
913/795-2218

Cheyenne Bottoms Waterfowl Mgmt. Area
Route 3
Great Bend, Kansas 67530
316/793-7730

Garden City District Office
South Star Route
Garden City, Kansas 67846
316/276-8886

KANSAS WILDLIFE Magazine
A bi-monthly publication
available from the
Pratt headquarters.
$6.00 - 1-year subscription
$11.00 - 2-year subscription
$15.00 - 3-year subscription
(Prices subject to change.)

There are several other excellent sources of information on environmental topics available in Kansas and nationally. The organizations provide materials, speakers, or services on environmental education. This list is not complete. Make additions where appropriate.

Kansas Organizations

American Camping Association
Missouri Valley Section
4201 W. 15th Street
Topeka, Kansas 66604

Dillon Outdoor Education Center
3002 East 30th
Hutchinson, Kansas 67501

Environmental Education Curriculum Materials Center
Education Division
Farrell Library, Kansas State University
Manhattan, Kansas 66502

Great Bend Zoo
City Park
Great Bend, Kansas 67530

Kansas Academy of Science
Department of Biology
Emporia State University
Emporia, Kansas 66802

Kansas Advisory Council for Environmental Education
(Contact the State Department of Education
Science coordinator, or State and Extension
Forestry for information.)

Kansas Association of Conservation Districts
Route 1, Box 32
McPherson, Kansas 67460

Kansas Bass Chapter Federation
(Write to Kansas Department of Wildlife and Parks
RR 2, Box 54A, Pratt, Kansas 67124
Fisheries Division for address of
current Youth Director.)

Kansas Canoe Association
2319 Terry Way
Manhattan, Kansas 66502

Kansas Energy Office
214 W. 6th
Topeka, Kansas 66603

Kansas Geologic Survey
1930 Avenue A, Campus West
University of Kansas
Lawrence, Kansas 66044

Kansas Herpetological Society
Museum of Natural History
University of Kansas
Lawrence, Kansas 66045

Kansas Ornithological Society
Department of Biological Sciences
Fort Hays State University
Hays, Kansas 67601

Kansas Outdoors Unlimited
P. O. Box 470
Herington, Kansas 67449

The Kansas School Naturalist
Emporia State University
Division of Biological Sciences
Emporia, Kansas 66801

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Kansas Water Office
Suite 503, Kansas Avenue
Topeka, Kansas 66603

Kansas Wildflower Society
c/o Washburn University
Mulvane Art Center
Topeka, Kansas 66621

Kansas Wildlife Federation
P. O. Box 720
Junction City, Kansas 66441

Lee Richardson Zoo
Finnup Park
Garden City, Kansas 67846

Museum of Natural History
University of Kansas
Lawrence, Kansas 66045

Sedgwick County Department of Environmental Resources
Historic County Courthouse
510 N. Main Street
Wichita, Kansas 67203

Sedgwick County Zoo
5555 Zoo Boulevard
Wichita, Kansas 67212

Soil Conservation Service
USDA
P. O. Box 600
Salina, Kansas 67401

State Biological Survey
2045 Avenue A, Campus West
Lawrence, Kansas 66044

State Conservation Commission
Room 1014, 535 Kansas Avenue
Topeka, Kansas 66603

State Department of Education,
Science, Math & Environmental Education
120 East 10th Street
Topeka, Kansas 66612

State Department of Health & Environment
Forbes Field, Building 740
Topeka, Kansas 66620

State Extension Services
Kansas State University
Umberger Hall
Manhattan, Kansas 66506

State and Extension Forestry
Kansas State University
2610 Claflin Road
Manhattan, Kansas 66502

State Park & Resources Authority
503 Kansas Avenue
P. O. Box 977
Topeka, Kansas 66601

Topeka Zoological Park
635 Gage Boulevard
Topeka, Kansas 66606

Wildlife Society Kansas Chapter
(Contact Kansas Department of Wildlife and Parks
RR 2, Box 54A, Pratt, Kansas 67124
for current president's address)

National Organizations

American Fisheries Society
5410 Grosvenor Lane
Bethesda, MD 20814

American Fishing Tackle Manufacturers Association
20 N. Wacker Drive
Chicago, IL 60606

American Forest Institute
1619 Massachusetts Avenue, N.W.
Washington, D. C. 20036

Boy Scouts of America
National Office
1325 Walnut Hill Lane
Irving, Texas 75062

Bureau of Land Management
U. S. Department of Interior
Washington, D. C. 20240

Center for Action on Endangered Species
175 West Main Street
Ayer, Massachusetts 01432

Center for Environmental Education
625 Ninth Street, N.W.
Washington, D. C. 20001

Ducks Unlimited, Inc.
P. O. Box 66300
Chicago, Illinois 60666

DU Kansas Regional Office
1004 West Ninth
Pratt, Kansas 67124
(check local chapter)

Environmental Protection Agency
401 M Street, S.W.
Washington, D. C. 20460

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ERIC Clearinghouse for Science, Mathematics, and Environmental Education
The Ohio State University
School of Natural Resources
1200 Chambers Road, 3rd Floor
Columbus, Ohio 43212

Forest Service
U. S. Department of Agriculture
P. O. Box 2417
Washington, D. C. 20013

The Garden Club of America
598 Madison Avenue
New York, New York 10022
(check local group)

Girl Scouts of the U.S.A.
830 Third Avenue
New York, New York 10022
(check local group)

Izaak Walton League of America
1800 North Kent Street, Suite 806
Arlington, Virginia 22209
(check local group)

National Association of Biology Teachers
11250 Roger Bacon Drive
Reston, Virginia 22090

Kansas Association of Biology Teachers
(Contact State Department of Education
Science Coordinator for current address.)

National Association for Environmental Education
P. O. Box 400
Troy, Ohio 45373

National Audubon Society
950 Third Avenue
New York, New York 10022

Kansas Regional Office
813 Juniper Drive
Manhattan, Kansas 66502
(check local group)

National Park Service
U. S. Department of Interior
Interior Building
Washington, D. C. 20240

National Science Teachers Association
1742 Connecticut Avenue, N.W.
Washington, D. C. 20009

State Chapter
Kansas Association of Teachers of Science
Contact: State Dept. of Education
Science Coordinator for information

National Shooting Sports Foundation
1075 Post Road
Riverside, Connecticut 06878

National Wild Turkey Federation
Wild Turkey Bldg., P.O. Box 530
Edgefield, South Carolina 29824

National Wildlife Federation
1412 16th Street, N.W.
Washington, D. C. 20036

The Nature Conservancy
Suite 800, 1800 N. Kent Street
Arlington, Virginia 22209

Natural Science for Youth Foundation
763 Silvermine Road
New Canaan, Connecticut 06840

Quail Unlimited
P.O. Box 10041
Augusta, Georgia 30906

Safari Club International
5151 E. Broadway, Suite 1680
Tucson, Arizona 85711

Sierra Club
530 Bush Street
San Francisco, California 94108
(check for local group)

Smithsonian Institution
1000 Jefferson Drive, S.W.
Washington, D. C. 20560

Soil Conservation Service
U. S. Department of Agriculture
P. O. Box 2890
Washington, D. C. 20013

Sport Fishing Institute
Suite 503
719 13th Street, N.W.
Washington, D. C. 20005

U. S. Fish and Wildlife Service
Department of the Interior
Washington, D. C. 20240

The Wilderness Society
1901 Pennsylvania Avenue, N.W.
Washington, D. C. 20006

Wildlife Management Institute
709 Wire Building
1000 Vermont Avenue, N.W.
Washington, D. C. 20005

The Wildlife Society
5410 Grosvenor Lane
Bethesda, Maryland 20814

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Glossary

Many of the terms below have been defined in the curriculum material. Check an ecology or biology book for further definitions and information. Definitions are taken from context of use in texts and the following sources:

Multidisciplinary Wildlife Teaching Activities, by William R. Hernbrode; *Project Learning Tree*, by the American Forest Institute, Inc.; and *The Random House Dictionary of the English Language, College Edition.*

ACRE—A unit of land equal to 43,560 square feet or 1/640 square mile.

ADAPT—To make suitable to environmental conditions; adjust.

AMPHIBIAN—Cold-blooded vertebrates that are covered with moist skin and live partially in an aquatic habitat and partially on dry land. This group includes frogs, toads, and salamanders.

ANNUAL TURNOVER—The rate of replacement of individual animals in a population. Bobwhite quail may have a 70 percent annual turnover. Only 30 percent of the birds alive at the beginning of the year are alive at the end of the year.

ANTLER—Bone-like growth on members of the deer family that falls off and grows back each year. Horns differ from antlers because they do not fall off each year. A few horned animals drop the outside sheath of the horn (such as antelope).

AQUATIC—Living or growing in water.

ARACHNID—Any arthropod in the class *Arachnida*. Includes spiders, scorpions, mites, ticks, etc.

BAG LIMIT—The number allowed to be harvested in regulated hunting and fishing. A hunter may remove four pheasants each day. This is a bag limit.

BIG GAME—Large, hunted animals, such as antelope and deer. Examples of small game are rabbits, squirrels, pheasants, quail, etc.

BIOME—A complex of communities characterized by a distinctive type of vegetation and maintained under the climatic conditions of the region.

BIOTIC COMMUNITY—The living organisms in a community. Includes all plants and animals in the community. The non-living parts would be the abiotic parts of the community.

BLIND—A hiding place for observing or photographing.

BOOMING GROUND—An area in the prairie used by prairie chickens for their mating dance. The male birds make a booming sound while they dance to attract females.

BOTTOMLAND—Low-lying land, usually near a river.

BOUNTY—An old practice of paying for removing certain animals. This was thought to be useful in reducing pest animals but proved to be impractical.

BROWSE—This word can be a noun or verb. Brushy vegetation used by animals as food (noun). To eat the twigs and leaves of woody, brushy plants (verb). Deer, elk, and moose are browsers.

BRUSH PILE—Branches and other vegetation piled together for wildlife cover.

BURROW—A hole or tunnel in the ground made by a small animal for habitation and refuge.

CAMOUFLAGE—Color and/or pattern that blend into the environment.

CARNIVORE—Meat eater.

CARRION—Dead animals in the process of decaying. Crows feed on carrion.

CARRYING CAPACITY—The number of animals of a species that can be supported in a particular habitat at any given time. This number will change with the season, and from year to year. It depends on competition from other animals, rainfall, and other weather factors.

CHANNELIZATION—Changes made to a river bed to straighten, widen, or deepen it. Used in land reclamation, and mistakenly used in flood control attempts but is very harmful to the river habitat.

CLASSIFICATION—The assignment of plants and animals to groups within a system of categories distinguished by structure, origin, etc.

CLEARCUT—A logging practice that removes all the trees in an area.

COLD-BLOODED—Describes animals that change body temperature to match their surroundings.

COMMUNITY—A group of plants and animals living in a particular location and interacting with each other.

COMPETITION—Struggle among organisms for food, space, cover, and other requirements for existence.

CONSERVATION—The wise use of natural resources to assure their presence in the future.

CONSUMER—Uses plants or animals as food. Eats producers. A primary consumer, such as a rabbit, eats plants. A secondary consumer, such as a fox, eats primary consumers.

COVER—Shelter provided by vegetation, debris, and irregularities of the land. Used by wildlife for sleeping, hiding, feeding, and breeding areas.

COVEY—A small flock or group. Quail are often found in a covey.

CRITICAL HABITAT—Includes the areas of land, water, and air space occupied by an endangered species at the time this species is listed. This habitat is classified by the federal government as being necessary for the species' survival.

CRUSTACEAN—Any chiefly aquatic arthropod of the class *Crustacea*. Usually has a hard shell or crust covering the body. Includes lobsters, shrimps, crabs, barnacles, etc.

DABBLING DUCKS—Ducks that live near shallow marshes, ponds, and rivers. They tip their tails up to feed, with the majority of their bodies above water. These ducks take off in vertical flight when startled. Also called "puddle ducks."

DECOMPOSER—Plants and animals that feed on dead material and cause it to mechanically or chemically break down. Examples include bacteria, fungi, and earthworms.

DEN—A secluded place, as the lair of a predatory animal.

DINGELL-JOHNSON FEDERAL AID IN FISHERIES RESTORATION ACT—D-J funds provide federal cost shares for fisheries projects. Funds provided by an excise tax on some fishing equipment.

DIURNAL—Active during the day. Opposite of nocturnal.

DIVING DUCKS—Ducks that prefer deep water as in lakes and bays. They feed by diving below the surface and take flight from a running start.

DOMESTIC ANIMALS—Animals of the home or farm, such as dogs, cats, chickens, etc.

ECOLOGY—The scientific study of the relations of living things to one another. A scientist who studies these relationships is called an ecologist.

ECOSYSTEM—A system formed by the interaction of a community of organisms with each other and their nonliving environment.

EDGE EFFECT—The tendency of wildlife to concentrate at the edges of two adjacent vegetative or land use types. The combination of habitats provides extra food and shelter.

ENDANGERED—Species that are in danger of becoming extinct throughout all or a significant portion of their range.

ENVIRONMENT—The total of all surroundings including air, water, plant life, people, and wildlife. Physical and biological factors included.

ESTIVATE (Aestivate)—To spend the summer in a torpid, or dormant, condition.

EXOTIC—In conservation terminology, this refers to a foreign plant or animal that has been introduced into a new area. The ring-necked pheasant is an exotic introduced to the U. S. from Asia.

EXTINCT—Species that no longer exist. Examples include passenger pigeon, great auk, and the sea mink.

EXTIRPATED—Describes species that were removed in a particular area but are found elsewhere. Mountain plover were extirpated from Kansas and have only recently been reintroduced.

FENCEROW—Vegetation growing along a fence. Often used by wildlife for cover.

FISH AND GAME COMMISSION—Organization that has responsibility for the wildlife and habitat in the state. Each of the 50 states has a similar organization.

FLYWAY—Flight routes used by migratory birds. Kansas is in the Central Flyway.

FOOD CHAIN—The sequence by which energy is passed from sun to plants to animals. A green plant is eaten by an insect that is eaten by a bird, forming a simple food chain.

FOOD WEB—An interconnection of food chains.

FORAGE—Used as a verb and a noun. Refers to vegetation taken by herbivores (noun). Act of taking the vegetation (verb).

FORBS—For wildlife use, forbs are weeds and herbs, low-growing annual or perennial herbaceous plants.

GAME—Animals that can legally be hunted, fished, or trapped.

GENUS—Used in plant and animal classification as the subdivision of families or subfamilies. A genus usually has more than one species. The genus *Canis* includes dogs, wolves, coyotes, etc.

GRANIVORE—Grain eater.

HABITAT—The place in which an animal lives. It must include food, water, and cover. This involves escape cover, winter cover, cover to rear young, and space to play. Loss of habitat is the biggest single threat to wildlife.

HARE—Rodent-like mammals of the genus *Lepus* having long ears, a divided upper lip, and long hind limbs adapted for leaping. Distinguished from rabbits by having young that leave the nest in 24 to 48 hours. Hares are generally larger than rabbits. Jack rabbits are hares.

HERBIVORE—Plant eater.

HIBERNATE—Spending winter, or a portion of it, in a state of sleep; a torpid or resting state.

HUNT—To search for game animals for the purpose of catching or killing. Hunting is now regulated under comprehensive laws in every state. Sport hunting removes the surplus of wildlife as opposed to market hunting in pioneer days when nearly all edible or useful forms of wildlife were taken almost without restriction.

INTERACTION—The relationship of one organism to another. The action of one population affecting the growth or death rate of another population. One population may eat members of other populations, compete for food, etc. Interactions can be positive, negative, or neutral.

INTERDEPENDENCE—The interrelationships of wildlife with one another and with the various elements of their environment.

INTERSPERSION—Mixing of habitat types. Interspersion of habitat creates edge.

INVERTEBRATE—Animal without a backbone.

KINGDOM—A province of nature. The animal, vegetable, and mineral kingdoms.

LARVA—Immature, wingless, feeding stage of an insect that undergoes complete metamorphosis. Also, the young of any invertebrate.

LIFE CYCLE—The continuous sequence of changes undergone by organisms from one primary form to the development of the same form in a subsequent generation. Immature animals grow, reproduce, and leave more immature animals, defining the species' life cycle.

LIMITING FACTOR—Anything that controls the density of a population within its habitat. Factors include the quality and/or quantity of food, water, cover, predators, disease, and climate.

MAMMAL—Any vertebrate of the class *Mammalia* including humans. All members of this class have hair on their bodies and feed their young milk.

MARSH—A tract of low wetlands generally supporting cattails and other reeds, muskrats, mink, red-winged blackbirds, and a wide variety of other species.

MICROCLIMATE—The environmental conditions in a restricted area. A shady area of cottonwoods in the sunny prairie may create a microclimate.

MIGRATORY—Birds and other animals that make an annual trip to a different area. Distance may be long or short, depending on the species. Sandhill cranes migrate through Kansas on their way to Texas for the winter and Canada for the summer.

MIMICRY—The close external resemblance of an animal to another animal or its surrounding. Often serves as protection or concealment. Imitate; simulate.

MOLLUSK—Any invertebrate of the phylum *Mollusca* comprising the chitons, snails, bivalves, squids, octopuses, etc. Typically have a hard shell.

MOLT—To shed worn feathers or skin so they can be replaced, or to lose one seasonal coat so it can be replaced by another.

MONOCULTURE—Vegetation of a single species, generally even-aged. This situation allows for little wildlife diversity and is potentially dangerous because it is more susceptible to disease.

MORTALITY RATE—The relative frequency of death in a community.

MUTUALISM—A close association between two different species whereby each species gains some benefit.

NATALITY RATE—Rate of birth.

NATIVE SPECIES—An animal or plant indigenous to a particular region.

NATURAL SELECTION—Process resulting in the survival and perpetuation of only those forms of plant and animal life that are able to adapt to the environment.

NOCTURNAL—Active at night; opposite of diurnal.

NONGAME—Animals that are not hunted, fished, or trapped; this includes the threatened and endangered species, song birds, etc.

NONRENEWABLE RESOURCES—Resources, such as soil and minerals, which cannot be regenerated by themselves.

OMNIVORE—Animal that eats both plants and animals.

ORGANISM—A form of life composed of mutually dependent parts that maintain various vital processes; any form of plant or animal.

PARASITE—An animal or plant that lives on or in an organism of another species from whose body it obtains nourishment.

PESTICIDE—Chemical preparation used to control populations of organisms.

PHOTOSYNTHESIS—The process by which green plants convert carbon dioxide and water into simple sugar. Chlorophyll and sunlight are essential to the series of complex chemical reactions involved.

PHYLUM—The major subdivision of the animal kingdom, consisting of one or more related classes.

PITTMAN-ROBERTSON FEDERAL AID IN WILDLIFE RESTORATION ACT—Funds gathered from an excise tax on sporting arms and ammunition for wildlife management and research use. A cost-sharing program of the federal government with the states.

PLANKTON—Organisms (usually microscopic) suspended in aquatic habitat. Includes bacteria, algae, protozoans, rotifers, etc. Phytoplankton are the plant plankton; zooplankton are the animal species.

POLLUTION—Harmful substances deposited in the air, water, or land which lead to a state of impurity and, often, unhealthiness.

POPULATION—All the individuals of a particular species in a given area.

PREDATOR—An animal that hunts other animals for its food.

PRESCRIBED BURNING—Planned application of fire to a predetermined area. A technique used in wildlife management to gain regrowth of certain vegetation.

PREY—Animals that are hunted for food by other animals.

PRODUCER—Organisms eaten by consumers. Green plants are primary producers; they are able to make food from sunlight and organic substances.

PRONGHORN—The proper name for the American antelope, *Antilocapra americanus*. Not a true antelope; does not have true horns. Pronghorns belong to a family by themselves. They are not found outside of North America.

RANGE—(a) Home range: the geographic area in which an individual animal resides. (b) an area grazed by livestock and/or wildlife. (c) all lands including forest land that produce native forage, in contrast to land cultivated for agricultural crops or carrying a dense forest.

RAPTOR—Bird of prey, such as eagles, hawks, and owls. Predatory birds.

RECYCLING—The salvage and reprocessing of used materials, such as paper, glass, and aluminum.

REFORESTATION—The replanting of trees in forests that have been affected by cutting, fire, disease, etc.

REFUGE—A wildlife sanctuary. National wildlife refuges are located across the United States. Kirwin, Quivira, and Flint Hills NWR are in Kansas.

REINTRODUCTION OF SPECIES—A wildlife management technique in which a species is reintroduced into its historic range, replanted in areas where it was extirpated.

RENEWABLE RESOURCES—Resources, such as trees and wildlife, that renew themselves naturally.

REPTILE—Any cold-blooded, scaled vertebrate of the class *Reptilia*, including turtles, lizards, snakes, and crocodiles.

RESERVOIR—A place where water is collected and stored for use. Kansas has approximately 25 reservoirs, such as Cheney, Wilson, and Clinton.

RESIDENT WILDLIFE—Animals that are residents of a specific area on a year-round basis, as opposed to migratory.

RIPARIAN—Dwelling on the bank of a river or other body of water. Riparian habitat is situated along a river.

RIPRAP—A quantity of stone placed in water for fish cover, and to prevent bank erosion.

ROADSIDE DITCH—Areas bordering roads; can be excellent for wildlife habitat if they are left to grow and have diverse vegetation. Too often, these areas are mowed and their use to wildlife reduced or removed.

RODENT—A gnawing or nibbling mammal, including mice, squirrels, and rabbits. Animals in the order *Rodentia*.

SACS—The baglike structure in an animal or plant. The prairie chicken has orange sacs on the sides of its neck.

SCAVENGER—An animal that eats the dead remains and wastes of other animals and plants. Dermestid beetles are scavengers.

SEASON (OPEN SEASON)—In wildlife terminology, season refers to a time when hunting and fishing is permitted for a particular species. May be a few days or year-round.

SEDGE—A rush or grass-like plant growing in wet places; sawlike edge to blade of plant.

SHELTER—Cover; cover from elements for raising young, to travel in, for breeding, sleeping, etc. Varies by species.

SHELTERBELT—Rows of trees and shrubs generally on the north and west sides of farms, homes, or fields; protects from weather and provides wildlife habitat.

SKINK—Any of a family of small, smooth-scaled lizards.

SLOUGH—An inlet from a river; backwater; tide flat, a creek in a marsh.

SMALL GAME—A hunting term designating smaller hunted species, such as rabbits, squirrels, quail, etc. Compare with "big game."

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SPECIES—A group of individuals that resemble one another and are able to breed among themselves but not able to breed with members of another species. A category of biological classification immediately below the genus or subgenus. Species is both singular and plural.

STEWARDSHIP—The concept of land responsibility--that we do not own land but are managers of the resource and responsible to future generations for the condition of the land when we leave it.

STRESS—Usually thought of as a physical factor that applies to detrimental pressure to an organism or population. A drought might stress an animal population possibly resulting in inhibited reproduction.

SUCCESSION—The orderly, gradual, and continuous replacement of one plant or animal by another. A bare field will gradually develop into a woodland if not disturbed by fire, mowing, etc.

SURPLUS—That quantity of wildlife above the carrying capacity. The surplus is removed by disease, starvation, hunting, or predation.

TALON—A claw from a bird of prey.

TERRITORY—An area defended by an animal against others of the same species. Used for breeding, feeding, or both. Wolves are territorial.

THREATENED—Species of plants and animals that are protected by law and are limited in number or range or both. May become endangered if reduction continues.

UNGULATE—A hoofed mammal.

UNITED STATES FISH AND WILDLIFE SERVICE—The federal organization responsible for wildlife on the national level. This organization sets standards and gives guidance to the state wildlife agencies.

UPLAND—The higher ground of a region; above the level where water flows. Upland game animals include prairie chicken, turkey, pheasant, quail, etc.

VERTEBRATES—Animals with backbones.

WARM-BLOODED—Animals that are able to maintain a fairly constant body temperature independent of their environments, as opposed to cold-blooded animals.

WATERFOWL- Water birds; usually ducks and geese but may be used in referring to shore birds and wading birds as well.

WILDFIRE—Any fire other than a controlled or prescribed burn occurring on wild land.

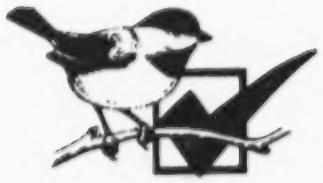
WILDERNESS AREA—An area established by the federal government to conserve its primeval character and influence for public enjoyment under primitive conditions in perpetuity.

WILDLIFE—All wild, living animals. Includes birds, fish, mammals, reptiles, amphibians, insects, mollusks, crustaceans, etc. Occasionally, the term is even applied to plants. Game and nongame animals are wildlife.

WILDLIFE MANAGEMENT—An effort based on the science of ecology and designed to maintain wildlife at certain population levels. This effort entails habitat manipulation and an understanding of wildlife population dynamics, diseases, behavior, and reproduction. This is done by wildlife managers working for the Fish and Game Commission and by other interested individuals and groups.

WILDLIFE RESEARCH—Investigating wildlife to gain information that can be used to better manage wildlife. Examples of projects might include taking a survey or census of populations, gathering and analyzing data about animal behavior, and studying and comparing the interaction of wildlife within habitats.

ZOOLOGY—The study of animals; a branch of biology.



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